John
Cranford,
M.D.

A

TREATISE

ON

TROPICAL DISEASES,

&c. &c. &c.

A

TREATISE

ON

TROPICAL DISEASES;

ON

MILITARY OPERATIONS;

AND ON THE

CLIMATE

OF THE

WEST-INDIES.

BY

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Crawford

PREFACE

TO THE

FIRST AND SECOND EDITIONS*.

THE firſt part of the following treatiſe on the dyſentery again appears with ſome alterations; it was originally publiſhed in the Weſt-Indies, and has often been republiſhed in the iſlands, and in different places in Europe. But the ſecond and third parts, together with the reſt of the preſent volume, are now firſt ſubmitted to the world.

The practice I have recommended in the treatment of the dyſentery, has not only been approved in the Weſt-Indies, but is adopted in many parts of Europe, and the Eaſt-Indies.

The principal ſeat of the laſt war being in America, the belligerent powers had many troops in all the Weſt-Indian iſlands: where the French and Spaniards, as

* The firſt edition was publiſhed on the 30th of November, 1787, and the ſecond edition on the 4th of April, 1789.

well as the Engliſh, had great part of their forces, deſtined for particular ſervices, exterminated by the bloody flux.

It was chiefly owing to the ravages of this diſeaſe in the French armies, that the Engliſh iſlands were not invaded earlier; and it was alſo owing to the ſame cauſe, that the Engliſh forces were, in many inſtances, unable to retaliate on their enemies.

Notwithſtanding the method of treating this ſevere calamity ſucceſsfully, by the means of ſudorific medicines, was not publiſhed until the war was conſiderably advanced, and had a multitude of prejudices to contend againſt, before its concluſion, many French, American, and Engliſh army ſurgeons, had intirely laid aſide the uſual, but uſeleſs reliance, on purgatives, opiates, and aſtringents; and followed this practice with the utmoſt ſucceſs, under all the diſadvantages to which the military are ſubject, from the ſcarcity of neceſſaries, and bedding.

I have not increaſed the volume of the materia medica by any new medicine or compoſition, in the cure of this diſeaſe; nor can the articles I recommend be exceptionable, either on account of their bulk, or complexity: for they occupy but a ſmall ſpace in a ſurgeon 's cheſt, and require but little time, and no trouble in preparing them.—I have aimed at the ſame œconomy of ſpace and time, in every other diſeaſe, of which I have treated.

It is a cuſtom of very ancient preſcription in phyſic, for authors, when advancing any new doctrine, to ſe-

leſt

lect their ſucceſsful and remarkable caſes, to ſupport their principles; and ſome have been ſo intent upon this object, as to ſtamp their labours, even with doubtful marks of authenticity, rather than with none, to obviate ſuſpicion.

From the frequency of this cuſtom, though I have not implicitly followed it, I ſuppoſe it has been found uſeful by thoſe who have. But whatever private advantages may have been acquired, the cuſtom ſeems to me of leſs utility to mankind, than if ſuch writers had ſignalized their failings, and placed beacons on the rocks, where the wrecks were made.

A few only have dared to imitate the candour of HIPPOCRATES and SYDENHAM, in this:—in that, every dabbler in phyſic decorates his volume, and illumines thoſe pages, which he fondly hopes, will be the guide for poſterity.

'Tis true that it requires great reputation, or an extraordinary good opinion of the world, to confeſs to it our errors, and to offer mankind inſtruction by thoſe unpleaſing leſſons which reſult from human frailty. Therefore, an obſcure individual prudently weighs the danger of recounting his miſtakes; leaves honeſt confeſſions to men at the ſummit of human wiſdom, and ſeizes his proſelytes, by aſſerting the infallibility of ignorance.

There is another tranſgreſſion againſt the laws of tyrant cuſtom, which will be found that I have made, in ſeveral parts of the following work;—where, inſtead of

drawing out my materials into long diſſertations, I have often condenſed the experience of many years into a few ſhort paragraphs, and have truſted its ſupport only on my own aſſertion.

The daily publication of medical books, and promulgation of new ſyſtems in phyſic, lead to a ſuppoſition that either phyſic is not a ſcience of books, and capable of being imparted through the medium of words; or that medical writers have aſſerted a great deal more than they have been able to maintain.

The raiſing theories in oppoſition, one againſt another, and not attending to diſeaſes and the improvement of practice, has been the employment of many medical people; and they have accordingly had the ſucceſs to convince the world, that they underſtood better how to talk of diſeaſes, than how to cure them.

Diſeaſes unfortunately are not to be conjured down with words;—if they were, the ſchools of MARCELLUS and SAMONICUS had ſtarved the followers of HIPPOCRATES.

Yet it muſt be confeſſed, that in the writings of many of the modern theoriſts, there are excellent diſcriminations, and profound pathological reaſoning on diſeaſes; but when we come to the curative part, we clearly ſee the truth of SYDENHAM's remark, that, "ſpeculation and practice ſeldom meet in the ſame perſon:" and the admiration we beſtow on the eloquence and force, which they employ in chaſtiſing the practice of others, vaniſhes at the ſight of their own preſcriptions.

Every

Every perſon knows, not only the ſage precepts founded on practice, but the accurate deſcriptions, drawn from nature, of HIPPOCRATES; and what oppoſition his doctrine experienced from ASCLEPIADES and THEMISON; and how often its place has been uſurped by the confuſed and unnatural jargon of ſectaries and ſophiſts. Every perſon alſo knows, that prior to SYDENHAM, though there had been many attempts at new theory and reformation, after the reſtoration of learning, yet from GALEN's time, there was but little improvement in the practical part of phyſic: and if we except the ſtrange innovations of PARACELSUS and HELMONT, there was ſcarcely any eſſential alteration in it.

When we look back on that interval of fifteen hundred years, and ſurvey the huge maſſes of literature which were brought forth in it, as at the remains of barbaric monuments, though we cannot admire the beauty of the fabric, we muſt wonder at the labour and patience of the compilers.

It is as difficult to aſcertain when hereſy and ſophiſtry will ceaſe in phyſic, as in religion. Within theſe few years, when the great NEWTON lighted up the world, it was the faſhion of phyſic to talk learnedly on *Carteſian* errors; to purge and vomit mathematically; to be able to account for all things geometrically; and to have a perfect acquaintance with every thing but—nature.

If each of the laborious writers of that, and former periods, inſtead of writing on every diſeaſe, had taught us effectually to cure one;—if inſtead of making books

they had made obſervations on diſeaſes, even the *Gout* might have ſubmitted;—the *Inſane Mind* might have been reſtored, and the cauſe explained, how that derangement of the intellectual, exiſts without impairing the corporal faculties:—the *Tetanus* would probably no longer have perplexed us, nor wherefore that terrible diſeaſe ſo partially and violently invades the body, without diſturbing the mental, and vital functions.

But the misfortune to which the ſcience of phyſic has been, and muſt ever be ſubject, is, that they who will write moſt, muſt be, in general, leaſt qualified; for large books cannot be written in the hurry of extenſive practice; and nothing but extenſive practice can cure a man of prejudices, and qualify him to write at all.

Beſides, there is more labour in writing with due care and caution, in this important ſcience, when a man has furniſhed himſelf with materials, than many have fortitude, or perhaps health to encounter. This has no doubt deprived the world of many great diſcoveries; and had nearly kept from it the invaluable treaſure bequeathed by SYDENHAM; who never ſat down to write in the latter part of his life, but he was inſtantly attacked by that excruciating diſorder the gout; which at length brought on other diſeaſes that terminated his exiſtence.

Yet, if honeſt zeal for the welfare of mankind, and a deſire to juſtify their good opinion, could alienate ſelf-intereſt from its attachment, and ſtimulate every perſon who has had ſufficient experience, and who might find

leiſure alſo to undertake the taſk, we ſhould probably have had many SYDENHAMS among us. But fame, I fear, acts feebly upon hearts, to whoſe ventricles the ſacred appetite for gold, has long been fixed and riveted.

Thus, inſtead of men of great experience, and mature judgment, the world muſt expect to ſee young dictators come forward, prompted by genius or neceſſity, to drive the nail of phyſic, and preſcribe its irrevocable laws :—and thus, diſeaſes are created, and cures performed, which have only had exiſtence, like BERKELEY's matter, " becauſe they were perceived by the ideas."

As the reſult of experience is the only uſeful knowledge in phyſic, every intereſting fact, founded thereon, ſhould be reſcued from oblivion; and they who have contributed their mite to form collections of this ſort, deſerve much more of mankind than many who have written volumes of inſipid imitation, or fine-ſpun theory, the common ſenſe of which, might generally be deſcribed on the margin of their works.

The learned preſident of our London college of phyſicians, Sir GEORGE BAKER, has judiciouſly revived a ſpecies of medical literature, that has been too much neglected. Encouraged by his example, a genuine repoſitory may be formed, that will add reputation to the profeſſors, and ſuſtain the dignity of the profeſſion. But while novelty is ſought for, and every trivial thing avoided, care ſhould be taken that no fabrication, from the mutilated remnants of our anceſtors, be admitted. We lament to view their venerable garments cut up into the

the fashion of the day, and the wearers claiming them as their own, pass them on the world, as if they had never been seen before.

Great as the improvement has been in anatomy, and great as the masters of that art are, in France and England, while they triumph over their ancestors, they will but prepare triumphs for posterity, if that part thereof which applies to the discovery, and consequently to the cure of diseases, be neglected for curiosity; should comparative anatomy have nothing profounder to relate than that fishes have the sense of hearing; that dogs owe the acuteness of their smell to the structure of their noses; and that wings would have been an useless appendage to man;—should physiologists become virtuosi; should BONET and MORGAGNI be thrown upon the shelf, and the columns be conceded to "an alligator stuff'd, and other skins of ill-shaped fishes." In such a relapse of science, if professors succeed, they must owe their consequence to the disgrace of their art;—the admiration of the vulgar.

The science of physic has derived less practical benefit from physiology, since the discovery of the circulation of the blood, and the distribution of the chyle, than is generally imagined. GASSENDUS would have been disappointed in his hopes, had he lived until these days.———

For much remains to be done: and though the great HARVEY, the ingenuous ASELLIUS and the fortunate PECQUET, made such grand contributions to the ancient

ancient ſtores, with the late diſcoveries that have been added, and the advantages which the anatomic art has received from injections, and glaſſes, there are ſtill many tenets retained in the code of phyſiology, which ſtand but on apocryphal authority. The field is not to be abandoned to *Amateurs* alone, to revive the legitimate ſpirit of injury, that animated the genius of ARISTOTLE, FABRICIUS, and HARVEY.

Modern ſurgery has eminently advanced itſelf as an important branch of the healing art. It was indeed the opinion of Mr. CHARLES BERNARD, in the beginning of the preſent century, "that there were more uſeful operations among the ancients, omitted or diſcontinued by us, than we have invented;" which probably may be true even at this day. But the modern advancement of ſurgery, excluſive of the advantage which the operative part has acquired by the excellence of our inſtruments, and the contributing branches of mechanics, ariſes rather from taking away, than from adding, to the practice of the ancients, and from ſimplifying their methods; many of which were coarſe, violent, and barbarous. We do not, at this day, like ancient ſurgeons, hang people up by their feet to beams, nor rack them on Procruſtean beds, to reduce diſlocations, without any regard to anatomy.

Chemiſtry has opened abundant treaſures for the purpoſe of medicine. The materia medica has regularly received addition, and alteration, as that ſcience has advanced; and has ſcarcely retained any thing but bark and opium, which the vegetable world can call its own.

The

The utility of botany in phyſic, appears to correſpond in an inverſe ratio, with the labour that has been beſtowed on it.

From natural philoſophy great medical advantages have been obtained. By this, we have learned to imitate, to augment, to diminiſh, and to apply many of the operations of nature, and to combine ſuch of her powers, as anſwer our purpoſes better in a mixed, than in a ſimple ſtate. We turn hopeleſs from the toils of anatomy, to this ſublime revelation, for a ſolution of the phænomena of the nerves, which at preſent confound us.

In this enlightened age, when almoſt every perſon who can read, makes pretenſion to ſome ſcience or other; when ignorance is no longer faſhion, nor emulation in arts diſgraceful;—that labour, which in former ages of the world would have crowned an author with immortality, now, can hardly ſecure his fame, the duration of an ephemeron.—Yet he who ventures fairly on that "ſea of troubles," which none but authors know, for promoting the welfare of ſociety, ought not to repine; his conſcious motives ſhould bear him up:—for to have lived to ſuch a purpoſe, however ſhort the exiſtence, may be remembered without that bitter ſoliloquy, "few and evil have been my days."

Whatever may be the fate of this publication, I have the ſatisfaction of knowing that it contains a faithful relation of facts, founded on my own experience; and as far as concerns the Weſt-Indies, the reſult of twelve years extenſive practice there. However, I ſhould not have

have troubled the world with it, if I could not urge in its defence, that I never could cure the diſeaſes to which it extends, by the books that have been already written on the ſame ſubjects by others.

It is under this conviction I have preſumed to offer this volume, as a ſpecimen of my practice, and of what I intend farther to publiſh, on diſeaſes in Tropical countries. If in the courſe of this work it ſhall be found that I have miſtruſted the ſkill or accuracy of others, it is becauſe every day's obſervation convinces me, that there are not ſo many wonders in phyſic, nor ſo many extraordinary diſeaſes incident to mankind, naturally, as have been aſſerted; and that there are ſymptoms deſcribed, as pathognomonic of more, which are but the iſſue of improper treatment. Theſe evils I attribute to the poiſon of medical literature, raiſed on theory, uncorrected by experience; where men, following one another like *Cranes*, ſtorm human infirmities mechanically:—before whom, nature and the diſeaſe, like a fortification aſſailed by mortal engines calculated by rule for its deſtruction, often fall together, and are buried in confuſion, under the ſame ruins.

ADVERTISEMENT

TO

THE THIRD EDITION.

IN this edition I have added much important matter, and alſo an index. I have likewiſe made ſuch corrections, and alterations in the arrangement of the whole, as want of leiſure prevented when the publication firſt made its appearance.

From the title of the work it might be inferred, that my doctrines were confined to intratropical countries: but this is not the caſe. The principal diſeaſes on which I have written, are prevailing epidemics, or thoſe of the moſt dangerous kind, in every climate; and ſome of them, the ruinous attendants on camps, fleets, and armies,—the ſcourge of wars, in every part of the world.

B. M.

LONDON, *Pall Mall*,
30th of December, 1792.

*** Wherever the authorities of HIPPOCRATES, GALEN, and SYDENHAM, have been uſed in this publication, it may be proper to ſay I have referred to the following editions of their works.——The Paris edition of HIPPOCRATES and GALEN, by *René Chartier*, of 1679; and the Leyden edition of SYDENHAM, of 1741.

I have often given the Latin verſion of HIPPOCRATES, GALEN, and other writers, for the ſake of general utility.

ON THE

CLIMATE

OF THE

WEST-INDIES.

TO thoſe who are impelled by neceſſity, or induced by intereſt, to viſit the torrid zone, and relinquiſh the bleſſings which flow from exerciſe in the delightful climates of the earth, in temperate regions;---to thoſe who exchange their native countries, which yield the free and unbounded enjoyments of ſpontaneous health, for ſuch as no care, nor art, can ever make agreeable;---ſome cautions may be neceſſary---ſome precepts uſeful.

That health is retainable by Europeans in hot climates, is well known and experienced. But when the numerous and expenſive requiſites have been obtained, the rigid reſtrictions, and ſelf-denials, which are ſtill neceſſary to keep the body and ſoul in uniſon, render the poſſeſſion of health ſo often a matter of neglect, that human fleſh, diſſatisfied to exiſt in the inſipid ſecurity of temperance, reſolutely compounds for a ſhort life, or impaired faculties, and ſeizes the preſent hour of pleaſure, and dangerous enjoyment.

In countries between the tropics, the heat is nearly uniform; and ſeldom has been known to vary through the year on any given ſpot, either by day or night, ſixteen degrees *.---It is, at a medium, on the coaſt, and on plains not much elevated above the level of the ſea, at about eighty degrees of *Fahrenheit*'s, or twenty-four degrees of *Réaumur*'s, thermometer †.

* *Fahrenheit*'s thermometer is what is every where meant in this publication, unleſs expreſſed to the contrary; and the obſervations on it, made in a north ſhade, with the inſtrument placed at the diſtance of ſix, eight, ten, or twelve feet, from the earth; avoiding, as much as poſſible, any reflected heat.

† At Charles-Town, in South Carolina, N. Lat. 32° 45′, where the medium heat is 66, there is ſometimes a variation of 83 degrees in the courſe of the year. The mercury in the thermometer has ſunk to 18, and has riſen to 101.

The

The greateſt heat, obſervable on the thermometer, in the ſhade, in tropical countries, is between one and two o'clock in the afternoon; at which time, on the plains, and ſea-coaſt, the mercury ſeldom aſcends above 90°, nor deſcends below 80°, through the year. The diminution of heat, at night, ranges from five to ten degrees, but ſeldom below 70°, even in the cooleſt months.

The greateſt heat ſhewn by the thermometer in the open ſun, is, about three o'clock in the afternoon; when the mercury riſes ſeveral degrees higher than it does, placed in the ſun, at any other time of the day. Here it frequently mounts to 120°, 130°, and much higher, according to the clearneſs of ſky, and as the earth, or ſituation, is more or leſs reflecting. To theſe degrees of heat, negroes, in various labour, and in the cultivation of the ſugar cane, are often expoſed *.

* It has been obſerved in theſe, and more equatorial, regions, that, though the barometer is uſeleſs in indicating the variations of the weather, it exhibits a phænomenon not correctly aſcertained in temperate climates; which is, that the mercury has two diurnal motions, of aſcent and deſcent, of nearly a line, correſponding with the courſe of the ſun; aſcending as the ſun approaches the zenith and nadir, and deſcending as the ſun deviates from thoſe points. It remains ſtationary, at its higheſt and loweſt degree, for ſome hours.

During the ſix months of the year, when the ſun has paſſed the line on his annual return to either tropic, that ſeaſon is called the Summer ſeaſon: ſo from the twentieth of March (when the ſun paſſes the equator into the Northern hemiſphere, to viſit the tropic of *Cancer*) until the 21ſt of September, when he repaſſes it to the Southern hemiſphere, to reviſit the tropic of *Capricorn*, it is conſidered the Summer ſeaſon in our Weſt-Indies; and the remainder of the year, the Winter.

This is the Winter and the Summer of countries, where, in general, there is not more than ſix degrees of difference of heat, between the coldeſt ſeaſon in the month of January, and the hotteſt ſeaſon in the month of Auguſt; where the heat is always exceſſive on the whole, and where the ſun riſes and ſets all the year round at nearly the ſame hours, and where there is but little crepuſculum, or twilight.

But though the ſun imparts his influence almoſt equally within that tropic, for which he has paſſed the equator; yet the parallels under his vertical rays, doubtleſs, receive the greateſt portion of heat; but the difference is inconſiderable, and the inhabitants on the ſame ſide

as

as the ſun, find generally the ſame oppreſſive uniformity.

This is to be underſtood of the climate at large, as unconnected, and uninfluenced by local circumſtances, as mountains, valleys, woods, particular ſoil, ſituation, or any other cauſe favouring the aggregation, or diſſipation, of heat, or cold *.

Upon the mountains between the tropics, as upon the mountains in Europe, the air is cold in proportion to their height. In ſome of the iſlands there are mountains which afford agreeable ſituations; and on the continent, there are gradations of every degree of the habitable globe.

* Bosman ſays, near the iſland of *Annaboa* upon the coaſt of Guinea, directly under the line, in the month of September, when the ſun is vertical, that he could ſcarcely bear the cold. The reaſon of this cold is, he ſays, that there is always, at this time of the year, "thick weather, with ſtiff gales of wind, "which prevent their feeling the heat of the ſun." Almoſt a ſimilar cauſe operates at *Lima* to render that city far more cool and pleaſant than *Carthagena*, though it is nearly the ſame diſtance from the equator: which is, that the miſts, that prevail at *Lima* during conſiderable part of the year, ſoften the rigour of the ſun's rays, and the winds blowing, at the ſame time, from the frozen regions of the ſouth, cool and refreſh the atmoſphere.

Under the equatorial line on the continent of South America, in the province of Quito, the ſummits of the mountains of *Pinchinca*, *Cotopaxi*, and ſeveral others of the Cordelleras, are conſtantly covered with ice and ſnow. In the conqueſt of *Chili*, many of the Spaniards were frozen to death ſitting on their mules, in croſſing the mountains that divide *Chili* and *Peru*. The ſummit of *Cotopaxi* is computed to be 3126 toiſes, or 6643 Engliſh yards above the level of the ſea *; which is nearly 1423 yards higher than *Mont Blanc*, in Savoy †.

The refreſhing and unremitting Eaſtern breezes, which alone could render the Weſt-Indies habitable, are influenced in their courſe by the direction of the ſun ‡. When the ſun is in his progreſs to the Northern tropic, the

* Ulloa, Voyage to South America. Book VI. ch. 7.

† The ſummit of *Mont Blanc*, the higheſt of the Alps, is 15,662 Engliſh feet above the level of the Mediterranean ſea. *Mont Cenis*, the higheſt of the Alps croſſed in the route from Turin to Lyons, is 6261 Engliſh feet above the level of the Mediterrannean ſea.—I found the thermometer here, *à la Poſte*, at 40° on the 23d of October, 1787, at ten o'clock in the forenoon. The ſun ſhone, and it ſnowed ſlightly.

‡ The breezes ſet in gently in a morning, commonly about nine o'clock; increaſe as the ſun riſes to the meridian, and decline in the evening about ſix or ſeven o'clock.

breeze

breeze obliquely bends towards his tract, and blows after him from the South of the Eaſt. When the ſun is on his return to the Southern tropic, the breeze is inclined after him that way, and blows from the North of the Eaſtern point; ſo that the whole range of the breezes, or trade-winds, compriſes about thirty degrees of South and North latitude. Sometimes, when the ſun is on the South of the equator, the Winter's winds from the Northern continent, extend into the latitudes of the Eaſtern breezes, and overpower them with great violence. Hail is ſometimes brought with thoſe winds, but never ſnow.

The Northern tropical Winter and Summer may be ſub-divided into four periods: the firſt beginning in April or May, with the vernal rains, which commonly continue ſix or eight weeks. Then the ſecond advances, which is the hotteſt and drieſt ſeaſon of the year; for the ſun being, on the twenty-firſt of June, at the tropic of Cancer, has finiſhed his fartheſt Northern declination. The third commences in September, with the autumnal rains, which are heavy and violent; and the fourth in December, after the autumnal rains have ceaſed. This is the cooleſt and pleaſanteſt ſeaſon of the year, the ſun being, on the twenty-firſt of De-

cember, at the tropic of Capricorn, his greateſt Southern diſtance. The weather is now generally dry and ſettled, accompanied with night winds from the land, in all the countries whoſe mountains are ſufficiently lofty to cool the air; with frequent North winds in the day, from the continent of North America.

Although there is no regularity in the ſetting in, or duration, of the vernal and autumnal rains, yet there are ſeldom any rains that are violent or laſting, from November until April. The Spring periodical rains, moſt commonly, in the iſlands, fall in May, though ſometimes not until June: and the autumnal rains ſometimes commence in Auguſt, though generally in October: but the time for the greateſt rains, and the greateſt heat, on the continent, as well as in the iſlands, is between the months of April and November: and the greateſt degree of dryneſs and coolneſs is during the months of December, January, February, and March. This is the ſeaſon when people, who can chooſe their opportunity, ſhould arrive in the Weſt-Indies: and this is the ſeaſon when military operations ſhould be carried on there; and alſo when ſhips of war, or troops, ſhould be ſent out to relieve, or ſupply, any ſtation or garriſon, that the men might be accuſtomed

to

to the climate, before the time of the greateſt heat advancing, and the ſetting in of the rains, and unhealthful ſeaſon *.

The voyage ſhould be undertaken ſo as not only to accord with this great object, but alſo to avoid being on the ſea between the tropics in the Weſtern latitudes, in the months of Auguſt, September, and October: for moſt of the hurricanes that have afflicted this part of the world, have happened in the Autumnal ſeaſon; and therefore, theſe are properly called the hurricane months.

Hurricanes generally ſet in from the North, or North-weſt, from the great rarefaction of the air within the tropic of Cancer, by the ſun's northern declination at this ſeaſon of the year: from which an influx of denſe air ruſhes in from the polar regions, and the great weſtern continent (the earth being ſuſceptible of much greater degrees of cold and heat than the ocean, which is preſerved in a more uniform temperature, from being incapable, like

* Rain, the ſcourge of health in tropical countries, is the ſalvation of it in others. Rome would ſoon be depopulated but for the rains, which cleanſe the ſtreets, purify the air, and dilute and waſh away the mephitic vapour that iſſues from the earth, and collects upon its ſurface, in the adjacent Campania, from a long continuance of dry and hot weather.

all

all tranſparent bodies, of deriving heat from ſolar light), and a great conflict is raiſed; the wind varying, with furious blaſts, from every point of the compaſs, until an equilibrium is reſtored, and nature compoſed, by the eaſtern winds regaining their courſe.

The ruin and deſolation accompanying an hurricane, cannot be deſcribed. Like fire, its reſiſtleſs force conſumes every thing in its track, in the moſt terrible and rapid manner. It is generally preceded by an awful ſtillneſs of the elements, and a cloſeneſs, and miſtineſs, in the atmoſphere, which makes the ſun appear red, and the ſtars larger. But a dreadful reverſe ſucceeding:---the ſky is ſuddenly over-caſt, and wild. The ſea riſes at once from a profound calm into mountains. The wind rages and roars like the noiſe of cannon. The rain deſcends in deluges. A diſmal obſcurity envelopes the earth with darkneſs. The ſuperior regions appear rent, with lightning and thunder. The earth often does, and always ſeems to, tremble. Terror and conſternation diſtract all nature. Birds are carried from the woods into the ocean; and thoſe, whoſe element is the ſea, ſeek for refuge on the land. The frightened animals in the fields aſſemble together, and are almoſt ſuffocated by the impetuoſity of the wind,

wind, in ſearching for ſhelter; which, when found, ſerves only for their deſtruction. The roofs of houſes are carried to vaſt diſtances from their walls, which are beat to the ground, burying their inhabitants under them. Large trees are torn up by the roots, and huge branches ſhivered off, and driven through the air in every direction, with immenſe velocity. Every tree and ſhrub, that withſtands the ſhock, is ſtripped of its boughs and foliage. Plants and graſs are laid flat on the earth. Luxuriant ſpring is changed in a moment to dreary winter.---This direful tragedy ended, when it happens in a town, the devaſtation is ſurveyed with accumulated horror. The harbour is covered with wrecks of boats and veſſels: and the ſhore has not a veſtige of its former ſtate remaining. Mounds of rubbiſh and rafters, in one place; heaps of earth, and trunks of trees, in another: deep gullies from torrents of water; and the dead and dying bodies of men, women, and children, half buried, and ſcattered about, where ſtreets but a few hours before were, preſent the miſerable ſurvivors with a ſhocking concluſion of a ſpectacle, generally followed by famine; and when accompanied with an earthquake, by mortal diſeaſes.

Such were the hurricanes, that left melancholy traces in many of the Weſt-Indian iſlands,

in the month of October, 1780: and particularly in Jamaica; where, on the third of that month, the weſt end of the iſland was laid waſte. Vaſt diſtricts of finely cultivated land were made a deſert, and ſeveral villages deſtroyed.

But the part of Jamaica which ſuffered moſt, was the pariſh of Weſtmoreland. Here, in addition to the preceding calamities, the ſea roſe in a column, appearing at a diſtance like a dark cloud, and overwhelmed the little ſea-port town of *Savannah-la-Mer*.

While many people were viewing the approach of this phænomenon from their windows, ignorant of what it was, it advanced ſuddenly upon them, drowned them in their upper rooms, into which they had retreated as the water roſe, and waſhed away their houſes and them together.

The ſea overflowed the land above half a mile beyond its uſual bounds, and carried ſeveral large ſhips with it. One of which, when the water ſubſided, was left nearly a quarter of a mile on the land.

This hurricane commenced from the S.E. about twelve o'clock at noon, and continued until

until eight in the evening. The ſea roſe between four and eight o'clock; and ſubſided at ten, with an earthquake. Nearly three hundred people periſhed *.

When Europeans embark for the Weſt-Indian iſlands, they muſt bid farewell to the ſports of the field. There are neither hounds, nor hares, nor ſtags, nor foxes; and it is well there are not; for the enthuſiaſm which thoſe ſports inſpire, is not to be curbed by craggy rocks, or precipices; or by grave leſſons, or fatal examples.

Horſe-racing has been introduced into ſome of the iſlands; and as a ſpecies of gaming, to the inconvenience of ſome, and to the advantage of others. But though it may contribute to improve the breed of that uſeful animal, the horſe, in the colonies,---climate, which will not permit ſuch violent exertions, forbids much pleaſure from it, as an animated amuſement.

* Hurricanes have viſited the Weſt-Indies periodically, and in ſome iſlands have continued annually, or nearly ſo, for a ſucceſſion of years, and then have diſappeared. The middle of the laſt century was diſtinguiſhed by a ſimilar ſucceſſion of Weſt-Indian diſaſters to that which has lately happened there.

It is fortunate for thoſe who have been accuſtomed to country ſports, that there are but few inducements to allure them here; but there are ſome, to which many have paid the tribute of their lives.

The *Snipe* is found here in great numbers; but this univerſal inhabitant of the earth meets with no more quarter here than in Europe; notwithſtanding the danger which is often experienced, from fevers acquired by purſuing him through the wet and marſhy places where he reſorts; which ought, in hot climates at leaſt, to be his ſanctuary.

Had the preſent race of Europeans been as ſuperſtitious about their *bones* as the *Patriarchs*, the *Greeks*, and the *Romans*, were, the tropical colonies had never exiſted as countries of wealth and commerce.

The hardy followers of COLUMBUS and GAMA * (for none but the ſtrongeſt ſpirits dare to leave their homes for new enterprize) have had no terrors of mind reſpecting their bodies; but adventured like heroes, with hearts, not

* The two firſt navigators to the *Weſt*, and *Eaſt-Indies*; the former was ſent out from Spain by *Ferdinana* and *Iſabella*, in Auguſt 1492; and the latter from Portugal, by *Emanuel*, in July 1497.

like

like VIRGIL's hero's, to be terrified at a ſtorm *. Regardleſs of their fate, they boldly undertook, and fearleſſly embarked in the ſevereſt labours, ſurrounded with dangers, and planted and became the patriarchs of colonies. They bid adieu to their countries, which perhaps had depreſſed their genius, or perſecuted them for debt, or religion; and ſcorned, as they could not reviſit their native homes in life, to entertain the hopes of returning to them, like negroes, after death †. Such were the firſt ſettlers of the colonies.

* Extemplo Æneæ ſolvuntur frigore membra.
Ingemit, et duplices tendens ad ſidera palmas,
Talia voce refert: O terque quaterque beati,
Queis ante ora patrum, Trojæ ſub mœnibus altis,
Contigit oppetere! ÆNEID. Lib. I. Ver. 96.

† Some negroes, from particular diſtricts of Africa, believe in Metempſychoſis; and imagine, when they die, they ſhall return to their own country. Theſe negroes often hang, or choak themſelves, in caſe of diſcontent, when they are firſt removed to the colonies. A Frenchman, in the iſland of *Martinique*, found out a remedy againſt this ſort of ſuicide, by which he prevented thoſe loſſes, others often ſuſtain, from purchaſing theſe people. "Pour les empêcher "d'attenter à leur vie, il falloit, quand on les châtioit, les "punir très ſéverement, parce qu'alors ils n'oſeroient aller "dans leur pays, et s'y montrer avec les marques des coups "de fouet qu'ils auroient reçus."

Chanvalon, Voyage à la Martinique, p. 63.

Great

Great as the mortality has been to accompliſh the preſent flouriſhing ſtate of the ſugar colonies, and great as the expence of human lives muſt be to maintain them, their commerce has contributed to raiſe the nations, to which they belong, to a condition of riches and grandeur, that European induſtry, without them, could never have attained.

In voyages, Sea-ſickneſs, though it continues, in general, only for the firſt day or two, is extremely haraſſing to ſome people, at intervals; eſpecially on any increaſed motion of the veſſel.

Sometimes, by long continuance, it cauſes fever, head-ach, quick pulſe, thirſt, white tongue, and a total deprivation of the retention of the ſtomach: evils which are always difficult to remove, and frequently terminate only with the voyage.

In my voyage to the Weſt-Indies, I was ſo reduced by ſea-ſickneſs that I could ſcarcely walk on my arrival in Jamaica. I experienced the ſame diſtreſs in my voyage from America to England.

This

This indiſpoſition is conſiderably alleviated by a ſmall tea-ſpoonful of *Æther*, taken now and then, in a glaſs of water, and applying ſome of it to the temples and noſtrils.

The ancient writers recommend acid fruits, bread and vegetables ſoaked in vinegar, after the ſtomach has been cleanſed by vomiting; but not to attempt to ſuppreſs the vomiting until that end was obtained.

An old remedy for ſea-ſickneſs, and a very common one among ſailors, is a draught or two of ſea-water; which, though a diſguſting medicine, at ſuch a time, yet where the firſt paſſages are foul and loaded, generally produces the deſired effect, when the perturbation it occaſions, ceaſes.

The famous SCHOLA SALERNITANA adviſes, by way of prevention, ſea-water mixed with wine *. A compoſition not likely to recommend itſelf to delicate palates.

Coſtiveneſs, a common inconvenience at ſea, ought to be removed by ſome mild aperient; as caſtor-oil, ſalts, manna, cream of tartar, mag-

* Nauſea non poterit hæc quemquam vexare marina,
Undam cum vino mixtam, qui ſumpſerit ante.

neſia, or pills compoſed of purgative ingredients.

When the warm latitudes are reached, it becomes every perſon to prepare his body, by temperance, for the unavoidable change it muſt undergo: and to people of a groſs habit, and of a ſtrong and full conſtitution, a mild purge or two, or frequently diluting with a weak ſolution of cream of tartar in water, if not bleeding, is neceſſary. The neglect of theſe precautions, occaſions violent perſpirations, troubleſome heats, and eruptions.

Head-achs, without fever, from the rarefaction of the blood ſtraining the tender veſſels of the brain, frequently attack people, on firſt entering hot climates, at ſea, as well as on ſhore. Theſe head-achs are often attended with giddineſs, and ſickneſs of the ſtomach, and alſo with great diſtreſs, unleſs the rays of light are excluded, which, by irritating the optic nerves, aggravate the complaint, and excite other diſagreeable ſenſations. The cure requires only bleeding, putting the patient's feet now and then in warm water, and keeping him in a dark place. A purge may be neceſſary, if theſe operations do not relieve, and if heat or coſtiveneſs accompany the diſorder.

On firſt arriving in the Weſt-Indies, though the uſe of the neceſſaries of life, and the moderate gratification of natural deſires, are by no means interdicted, yet every exceſs is dangerous; and temperance in all things is neceſſary to be obſerved by men, women, and children.

For youth, abſtemiouſneſs for a while is the beſt ſecurity againſt illneſs.

In regard to the article of dreſs, new-comers cannot do better than follow the preſent cuſtom of the reſidents on the iſlands: their clothes ſhould be light, made eaſy, and every way free from confinement. Formerly the inhabitants of the Weſt-Indies wore heavy European garments, covered with lace. The inconvenience attending that cuſtom induced them to an oppoſite extreme; and here they found that wearing linen, cotton, or ſilk coats, though agreeable enough in the ſun, and in the daytime, was not a ſufficient defence againſt any ſudden change of weather, or the night air. A thin cloth coat, therefore, and every other part of the dreſs as light as poſſible, is now worn by people in health.

For women, the light ſummer-dreſs of Europe is proper.

Moſt people, ſoon after their arrival, are attacked with what is called the *Prickly Heat*. This is an eruption of ſmall red pimples, unattended with any fever, which breaks out in different parts of the body, particularly where the parts are kept the hotteſt by the clothes, or where there is the greateſt irritation, and friction. It cauſes ſuch intolerable itching, or heat, and pricking in the ſkin, that human reſolution cannot refrain from ſcratching, until the ſkin is, ſometimes, excoriated. Many people have it every year, more or leſs, during the hotteſt months. It generally goes off in a few weeks, leaving the cuticle ſcurfy, which falls off in ſmall white ſcales. Sometimes it continues very obſtinate, and where people live heated by intemperance, or have any ſerpiginous humour in their habit, it fixes it on the ſurface of the body, in troubleſome ringworms.

There is great danger in repelling the Prickly Heat; therefore cold bathing, and waſhing the body with cold water, at the time it is out, is always to be avoided. A gentleman, a native of the country, bathed in the Spaniſh-Town river, in Jamaica, in the month of July, 1779, with the Prickly Heat on him, which ſtruck in by it, and cauſed a tedious fever, with an affection

fection of the brain; from which he recovered, but his mind was for a long time afterwards impaired, by a ſtupor and deſpondency.

When the Prickly Heat is very troubleſome, abſtemiouſneſs, with a cooling regimen, will ſoon remove it.

HILLARY ſays, the Prickly Heat "is the Ἰδρωα of the Greeks, the *Eſſera* of the Arabians, and the *Sudamina* of the Romans." But whatever reſemblance it may have to the Ἰδρωα, or *Sudamina*, it has none whatever to the *Eſſere*; which is an entirely different ſpecies of eruption from the other, as deſcribed by the Arabians *, but unnoticed by the Greek and Roman writers; and what we ſuppoſe to be the *Nettle-raſh*. Indeed I cannot ſee any reſemblance the Tropical Prickly Heat has to the Ἰδρωα of the Greeks, or to the *Sudamina*, or *Papulæ Sudoris* of the Romans. Theſe eruptions are claſſed among the diſeaſes of ſummer. GALEN

* *Eſſere* eſt puſtula parva lata ſicut veſicæ, et ad aliquantulam tendens rubedinem et pruritum faciens, et anguſtiam: eveniens ſubito ſecundum plurimum. Et accidit quandoque ut currat ab ea humiditas; et fortaſſe eſt ſanguinea. Et ſecundum plurimum fit vehemens in nocte, et ejus anguſtia fit in ea vehementior, et ejus triſtitia, &c. Et quum *Eſſere* invadit locum amplum, tunc ſi non fiat phlebotomia, timetur Febris Tertiana.

AVICENN. lib. IV. fen. 3. tract. 1. cap. 13. Vol. II.

terms them exanthematous; and they are generally described to be acrid, red pustules, containing humour, causing great heat and itching, and ulcerating the skin.

CLEGHORN has made a proper distinction between the *Sudamina* and *Effere*; but says the *Minorca* Rash, or Prickly Heat, is the same eruption as the *Sudamina*, or Ἱδρῶα; which from the climate I should think very probable, although his description of it does not correspond exactly with the description which CELSUS *, GALEN †, and ACTUARIUS ‡, have given of the *Papulæ*, or *Sudamina* §.

* Lib. V. cap. 28.

† Comment. III. in Aphor. HIPP. 21. Sect. 3.

‡ Aliquibus et quales Sudores, Ἱδρῶα, et nostris *Sudamina*, inde nuncupantur, erumpunt, nec quicquam mali portendunt, sed e materia ad cutem ruente gignuntur. Producit ea salsus et mordacis qualitatis particeps humor, ac pungunt sensumque vellicant et discuti desiderant varios pruritus excitantia. Horum quædam quum scalpuntur, sanguine manant: alia subcandidum vel leviter pallidum humorem expuunt, ut inde vigentem succum colligere liceat. Nonnulla demum in scabiosos affectus commigrant, et exulcerationes exanthematis succedunt. *Actuarii* Method. Med. Lib. I. cap. 23.

§ VOGEL, in CULLEN's Synopsis Nosol. defines the *Hydroa*, *Boa*, or *Sudamina*, "Pustulæ *milii magnitudine*, *aquosæ*, "*sine rubore et ullo dolore*, ex sudoribus repente sparsim toto "corpore emergentes."—This definition is by no means descriptive of what the Greek and Roman writers called *Hydroa* and *Sudamina*. It is not descriptive of what we call the *Prickly Heat*. PLINY, Lib. XXVI. cap. 11. says, "Boa, "id est, *rubentes Papulæ*.".

BONTIUS

Bontius has accurately deſcribed the Prickly Heat of *Java*, and ſays, that the eruptions are the ſame that Celsus calls *Papulæ*, Pliny *Sudamina*, and the people of Holland *Rootvont*; but they certainly are not.

Beſides the Prickly Heat, there are, in the Weſt-Indies, veſicular and exanthematous eruptions and effloreſcences, to which new-comers, and others, are ſometimes ſubject in the hotteſt months; which reſemble the Ἰδρῶα, *Papulæ*, *Sudamina*, *Eſſere*, and what Hippocrates calls Φλυκταινάι, the eruptive produce of Summer in temperate climates.

New-comers are often greatly diſtreſſed when travelling, or otherwiſe expoſed to the ſun, if any part of their face or neck ſhould be unſheltered by their hat, or their hands by their gloves. Such parts are ſubject to be painfully inflamed, or bliſtered, by the ſcorching ſolar rays.

There is a race of viſitors alſo which gives ſome uneaſineſs to new-comers; theſe are gnats, or, as they are called, *Muſquitoes*. They are moſt troubleſome towards night, in warm wet weather, and near woody, damp, or marſhy ſituations.---Italy is infeſted in the ſame manner in the ſummer-time, wherever there are rivers and ſtagnant waters; which I have experienced in many places, and can juſtify

HORACE's complaint in his marſhy journey from Rome to *Fundi*, in his way to *Brunduſium* *.

Though *Muſquitoes* are a great vexation in all the iſlands, yet they are worſe on the continent. It is ſaid at *Mexico*, and many other places, that they ſometimes kill people with their bites. Sir *Henry Morgan* thought, from the amazing quantity which he ſaw at the lake *Maracayba*, that it was a cloud before him.

Their bites raiſe little lumps, or ſwellings, in the ſkin, which cauſe an uncommon degree of itching; theſe are ſcratched ſometimes into painful acrid ulcers, particularly in the legs. A bite, if not ſcratched, or irritated, though extremely diſagreeable, will not long continue troubleſome. Some people apply oil, vinegar, lime-juice, or camphorated ſpirits, to the part, to allay the itching and tingling. In the inland and woody ſituations, even thoſe who have been long reſident in theſe countries, find it convenient to wear a ſort of looſe linen buſkins, to guard their legs in an evening; and it is an univerſal cuſtom to have a gauze curtain, or net, to ſurround the bed, to keep them away by night; otherwiſe, in ſome places, it would be impoſſible to ſleep.

* —— mali Culices ——
Avertunt ſomnos. Lib. I. Sat. 5.

Fire

Fire and ſmoke drive them away; and this is another practice uſed by people who reſide in the woods, and interior parts of the iſlands. On the continent, near woods and ſtagnant waters, the Indians bury themſelves in ſand, in an evening, having no other means to avoid their perſecution.

Another tropical inſect frequently attacks the feet and toes of new-comers, and ſurpriſes them with an unuſual ſenſation of itching; the reſidents are equally ſubject to the plague of theſe almoſt inviſible vermin, and are ſometimes lamed by them. Theſe are *Chigoes*, a kind of little fleas; they chiefly keep in duſty, dirty places, and are bred on hearths, and in chimney-corners, among the aſhes: they are about the ſize of a cheeſe-mite. They lance the ſkin imperceptibly in the ſoles of the feet, or about the toe-nails, and inſinuate themſelves, where they depoſit their eggs, including their eggs and themſelves in a little round veſicle, which increaſes to the ſize of a ſmall pea ſometimes, before it is noticed. It then acquires a blueiſh appearance, from the colour of the Chigo itſelf, which is in the midſt of an innumerable quantity of *animalcula*, each of which is capable of creating a new diſturbance, if,

in

in taking out the bag, it be broken, and any remain behind in the flesh. Some people have had great inflammations from them, and some have had their toes mortified. The negroes often let them collect and remain in their feet, until their toes rot off.

The common method of taking out the bag, is, with the point of a needle, without piercing it, by separating it from the skin quite round, and drawing it out; then filling up the hole, and rubbing the part with tobacco-ashes. LIGON says*, he had ten chigoes taken out of his feet in a morning, while he was at Barbadoes (which was from 1647 to 1650), by the most unfortunate Indian woman YARICO †.

There is also abundance of scorpions, tarantulas, centipedes, and spiders, whose venomous stings and bites are very painful, but rarely attended with danger. The tarantulas have their habitations in loose rocky places, and in the mountains; and those other insects are generally found in old buildings, among rotten wood, and in unfrequented places: sometimes they creep forth into beds, and among people's clothes, particularly scorpions, and are not detected until they are discovered by their sting. Rum, or oil, applied, generally abates the

* History of Barbadoes, p. 65.

† Spectator, N° 11.

anguish

anguiſh of the wound: but if a fever, with convulſive twitchings, enſue, which in bad habits of body, or when the wound is in a part of great ſenſibility, will ſometimes happen, the wound ſhould be immediately ſlightly burnt with *Lapis Infernalis*, or any cauſtic, and afterwards poulticed, and the patient ſhould take ſome warm diluting diaphoretic, with an opiate.

GALEN juſtly obſerves, that a perſon who had not witneſſed the fact, would not ſuppoſe that ſo ſmall an injury as the ſting of a ſcorpion, or the bite of a poiſonous ſpider, could produce the violent effects which they do in the whole body.

He ſays, the aculeus, or ſting, of a ſcorpion ends in the minuteſt point; and has no perforation through which any poiſon can paſs in to the wound. Yet, he ſays, we muſt ſuppoſe the venom to be ſome ſpirital ſubſtance, or moiſture, in which a great power is concentrated in a ſmall compaſs *.

Before I had an opportunity of examining this ſubject, my reſpect for the opinion of GALEN made me doubt the accuracy of LEEUWENHOEK, REDI, MEAD, and others, who aſſert that there is an aperture near the cuſpis of a

* De Locis Affectis, Lib. III. cap. xi.

ſcorpion's

ſcorpion's ſting; and that through this aperture a liquid poiſon is injected when a wound is inflicted. Repeated experiments, with the beſt glaſſes, have never enabled me to diſcover any foramen, or opening, whatever.

Mrs. *Pidgeley*, at Kingſton in Jamaica, in January 1781, was ſtung by a ſcorpion in the foot, above the little toe. The part became inſtantly red and painful; and ſoon after livid. The pain increaſed to great ſeverity. Some rum was applied to the wound, on which the pain immediately left the foot, and paſſed up to the groin, with great agony. The pain ſtill paſſed upwards, and diffuſed itſelf about the pit of the ſtomach, neck, and throat, attended with tremors, cold ſweats, and languors. As the pain paſſed the abdomen, it occaſioned a violent purging, and fainting, which ceaſed on its advancing higher. I was called to her, and gave her the following medicines, a few doſes of which removed every ſymptom. She had been extremely ill for thirty-ſix hours.

℞ *Sal. Succin.* ℈ij; *Camphor. gr.* xij; *Cinnabar. Antimon. gr.* x; *Confect. Card. q. ſ. fiant boli ſex.* One of theſe was taken every hour, with four ſpoonfuls of the following mixture: ℞ *Aq. Menthæ* ℥ vij; *Elix. Paregoric.* ʒ ij; *Syr. Croci* ℥ ſſ; *Miſce.*

But

But though theſe inconveniencies are found in the iſlands, there are none of the greater evils, with which the neighbouring continent abounds; ſuch as tigers, lions, bears, wolves, and deadly venomous ſerpents.

Of the various venomous ſerpents in Spaniſh America, we have but an imperfect account from the Spaniards. They reckon the following the worſt, and moſt common.

The *Corales*, or Coral Snakes, which are about four or five feet in length, and an inch in diameter, of a very beautiful appearance, their ſkin being variegated with a bright crimſon, yellow, and green, with an head ſhaped like the European ſerpent.

The *Caſcabeles*, or Rattle Snakes; and the *Culebras de Bejuco*, or Bejuco Snakes, as they reſemble the colour of the Bejuco, and from whoſe branches they hang down, and bite whatever diſturbs them.

The *Hæmorrhous*, which is common at Carthagena, and is called by its proper name. It is alſo common on the Spaniſh Main, and Muſquito Shore, where there are other deadly venomous ſerpents; one ſpecies of which the Indians and inhabitants call *Tomogos*, and another, the

Barber's

Barber's Pole, from the manner in which it is marked.

Ulloa says, "That a person bitten by the "*Coral Snake* immediately swells to such a de- "gree, that the blood gushes out through all the "organs of sense, and even the coats of the "veins at the extremities of the fingers burst, "so that he soon expires *."

These effects have been generally thought to belong only to the bite of the *Hæmorrhous*; but I believe the same effects are produced by all the tribe of deadly venomous serpents, and that there is no specifical difference between them, except in the violence and rapidity by which the poison is diffused in the body: the rest depending on the heat of the weather when the accident happens, and the state, and habit of body of the subject, at that particular time.

In the expedition from Jamaica in 1780, on the Spanish Main, a soldier of the 79th regiment, in marching through the woods near *San Juan* castle, was bitten by a serpent, hanging from the bough of a tree, under the orbit of his left eye; from which he instantly felt so much pain that he was unable to proceed. He died in a few hours, with his body considerably

* Book I. ch. 7.

swelled,

ſwelled, and of a deep yellow colour. The eye, near the bite, was entirely diſſolved.

The bite of the ſpecies of ſerpent called *Ptyas*, is ſaid to be followed by a tranquil laſſitude and ſleepineſs. NICANDER ſays, thoſe who are bitten by it die in delightful tranſport. This induced CLEOPATRA to apply it to her boſom, that ſhe might end her voluptuous life by a voluptuous death *.

F. HOFFMAN is one among a multitude who has been deceived by the falſe report of travellers on this ſubject. He ſays, "In the iſlands "of *Cuba*, *Jamaica*, and *Hiſpaniola*, the bites of "ſerpents are highly injurious to the inhabi-"tants." But in this HOFFMAN is miſtaken; for though the Spaniards exterminated the human aborigines of theſe iſlands, their immenſe woods, and inacceſſible mountains to men, would have been the protection of ſerpents, if there had ever been any. But the Spaniards did not find any poiſonous ſerpents in theſe iſlands when they firſt went there, which PETER MARTYR has properly recorded †.

* GALEN relates, that ſhe made a deep wound in her arm with her teeth, and poured the poiſon into it, after having tried its fatal effects on her two faithful female attendants. De Theriaca ad *Piſonem*, cap. 8.

† Decad. I. Lib. 1.

There

There are ſnakes in the iſlands, ſuch as the *Yellow Snake*, from eight to twenty feet in length: the large *Black Snake*, from four to twelve feet in length: and the ſmall *Black Snake*, and *Spotted Snake*, of about two or three feet in length. But the bites of theſe are not venomous; nor further troubleſome to cure than any other lacerated wound. Their depredations are confined to pantries, poultry, hens and pigeons neſts, young vermin, and reptiles. There are many fabulous ſtories related of the *Yellow Snake*, attacking calves and lambs, and twining round other animals and ſtrangling them:---and that the *Amphiſbæna*, or Silver Snake, has been found in the iſlands, and that its bite is venomous; but neither of theſe facts have been proved.

The bites and ſtings of all venomous animals are cured by the ſame local means; which are very ſimple, if they were always at hand. The injured part muſt be inſtantly deſtroyed, or be cut out. Deſtroying it is the moſt ſafe, and equally certain: and the beſt application for that purpoſe, is the *Lapis Infernalis*, or the *Butter of Antimony*.---Theſe are preferable to an hot iron, which the ancients uſed, becauſe an hot iron forms a cruſt, which acts as a defence

fence to the under parts, inſtead of deſtroying them. The *Lapis Infernalis* is much better than any other cauſtic; as it melts and penetrates during its application. The bitten part muſt be deſtroyed to the bottom, and where there is any doubt that the bottom of the wound is not ſufficiently expoſed, *Butter of Antimony* ſhould be introduced into it on the following day, as deep as poſſible; and inciſions ſhould be made to lay every part open to the action of theſe applications. Beſides deſtroying, burning, or cutting out the part, inciſions ſhould be made round the wound, to prevent the communication of the virus. The wound is to be dreſſed for ſome time with poultices, to aſſuage the inflammation cauſed by the cauſtics; and afterwards with acrid dreſſings, and hot digeſtives, to drain the injured parts.

Where the above-mentioned cauſtics cannot be procured, corroſive ſublimate, oil of vitriol, aqua fortis, ſpirit of ſalt, common cauſtic, or a plaſter made of quick-lime and ſoap, may be applied to the wound. Gunpowder laid on the part, and fired, has been uſed with ſucceſs. When a perſon is bitten, remote from any aſſiſtance, he ſhould make a tight ligature above the part, until proper application can be made. The Spaniſh writers ſay, that the *Ha-*

billa de Carthagena, or Carthagena Bean, is a ſpecific for poiſonous bites, taken inwardly.

Ulloa ſays, it is "one of the moſt effectual "antidotes known in that country (Carthagena) "againſt the bites of vipers and ſerpents: for "a little of it being eaten immediately after "the bite, it preſently ſtops the effects of the "poiſon; and accordingly all who frequent the "woods, either for felling trees or hunting, ne-"ver fail to eat a little of this *habilla* faſting, and "repair to their work without any apprehenſion.

"The natives tell you, that this *habilla* being "hot in the higheſt degree, much of it cannot "be eaten; that the common doſe of it is leſs "than the fourth part of a kernel; and that "no hot liquor, as wine, brandy, &c. muſt be "drunk immediately after taking it *."

The Carthagena bean, or habilla, is found in great abundance in the Weſt-Indian iſlands, where it is generally known by the name of *Antidote*, or *Cocoon*, or *Antidote Cocoon*. In ſmall doſes it is ſtomachic and diaphoretic; and in large doſes emetic and purgative. In ſeveral diſorders it is a powerful remedy; but its virtues are not ſufficiently known, except among

* Book I. ch. 6.

the

the Indians and negroes, who chiefly uſe an infuſion, or tincture, of it made in rum. This is externally, as well as internally, uſed for many complaints *.

I have been informed by ſome intelligent Indians, that any of the *Red Peppers*, ſuch as *Bird Pepper*, or *Bell Pepper*, or what is called *Cayenne Pepper*, powdered and taken in a glaſs of rum as much as the ſtomach can poſſibly bear, ſo as to cauſe, and keep up for ſome time great heat and inflammation in the body, and a vigorous circulation, will ſtop the progreſs of the poiſon of ſerpents, even after its effects are viſible; and that the bitten part only afterwards mortifies, and ſeparates, and that the patient, with bark, wine, and cordials, ſoon recovers.

This fiery practice is certainly agreeable to that of the ancients †, and probably the only internal

* This bean is the ſeed of the *Fevillæa* foliis cordatis, of PLUMIER, ED. BURMANNI, p. 203. tab. 209. *Fevillea* foliis cordatis, angulatis, of LINNÆUS, Spec. P. *Fevillea* foliis craſſioribus, glabris, quandoque cordatis, quandoque trilobis, or *Antidote Cocoon*, of BROWN, p. 374,

† "Neceſſarium eſt exſorbere portionem Meri Vini cum "Pipere, vel quidlibet aliud, quod calori movendo eſt, nec

internal treatment that can have any good effect; as in theſe caſes the powers of life, and the action of the heart, are ſuddenly enfeebled, and the pulſe in ſtrength and frequency obſerves almoſt a regular declenſion, from the time of the bite, until it intirely ceaſes in death.

This confirms the remark of CELSUS, that venomous bites kill by extinguiſhing the vital heat.

But there is no relying with ſecurity on any thing, without the external treatment.

The Indians in Popayan, when any perſon has been poiſoned by the *Coya*, or *Coyba*, (a deadly venomous inſect, ſhaped like a ſpider, but leſs than a bug), burn the part: and if the body begins to ſwell, they ſinge it all over with the flame of ſtraw, or dry graſs:—this proceſs generally ſucceeds.

GALEN ſays, when he was in Alexandria, there was a ruſtic, a little way from the town, bitten on one of his fingers by an aſp; the man

"humorem intus coire patitur. Nam maxima pars veneno-
"rum frigore interimit." CELS. Lib. V. cap. 27.

"Dandum autem eſt cum cibis edendum Piper, aut Allium.
"Vinum bibendum eſt forte, ut ex eo recentibus vaporibus, et
"familiari caliditate, corporis miſcella repleatur." P. ÆGINETA, Lib. V. cap. 2.

made

made a tight ligature on it, and ran immediately to town to a ſurgeon, who amputated the finger, and no miſchief enſued. He ſays he knew another, a vine-dreſſer, who being bitten on the finger by a viper, directly cut off the finger himſelf, with an hatchet, and without any internal medicine remained well *.

GALEN infers, that the ſlighteſt ſcratch in the ſkin is ſufficient to communicate the poiſon of animal venom.

He alſo infers, that this venom operates by affecting the nerves; extending the miſchief by means of their communication, from the injured part, to the whole ſyſtem.

He obſerves, that though the ſting of a ſcorpion may pierce through the ſkin, the bite of a poiſonous ſpider does not: that penetrates no deeper than the ſuperficies of the ſkin; and yet the whole body is ſoon violently affected by it. The cauſe of which, he remarks, is, that the ſkin is a continued covering over the whole body, and full of nerves; from whence poiſonous infection may be ſwiftly diſtributed to the origin of the nerves, or to ſome vital part, and become fatal.---Yet GALEN, in all caſes of venomous ſtings and bites, adviſes a liga-

* De Loc. Affect. Lib. III. cap. xi.

ture to be made, in the first instance, above the injured part; the good effects of which he had experienced even in the bites of deadly venomous serpents*. CELSUS also advises ligatures†.

FELIX FONTANA‡ attributes the first use of ligatures, in the bites of venomous animals, to KEMPFER; it is evident he had not consulted CELSUS or GALEN.

The use of ligatures, however, seem more applicable to the doctrine of lymphatic absorption, which was not known in GALEN's time.

But vascular absorption is by no means adequate to the phænomena, which arise from externally applied venom, or infection. Nor has it ever been ascertained, notwithstanding some pertinacious opinions, whether the solids, or the fluids, are the conductors of that universal affection which deranges the whole system, from the above causes.

The redness of the skin, and pain, which may be traced in the lymphatics and glands, leading from a part where infection has been inserted, is no conclusion. A puncture from the point of a needle often produces similar consequences.

* De Locis Affectis, Lib. III. cap. xi.

† Lib. V. cap. xxvii.

‡ Treatise on Poisons.

Whence

Whence comes it, that the ſmalleſt portion imaginable of the poiſon of ſome ſerpents, ſo inſtantaneouſly changes the ſtate of the ſolids and fluids, and ſo breaks down their union, that life is extinguiſhed, with electric rapidity; and that the poiſon of a mad dog ſhould be four, or ſix weeks before its effects appear; and ſometimes three, ſix, nine, or twelve months?

The movement of the lymphatic fluid is too ſlow for one of theſe operations, and too quick for the other.

MEAD's theory of infection ſuppoſes, that there exiſts a fluid in the nerves; by which poiſons are carried into the ſyſtem, and on which they act, in exciting their dreadful effects in the animal œconomy.

He ſays, "No regard ought to be had to the "immechanical notions of authors who ima- "gine that muſcular motion and ſenſation are "performed only by vibrations of the fibres of "the nerves, without the intervention of any "ſpirituous fluid. This fluid, ſo far as we can "diſcover by its effects, is a thin volatile "liquor, of great force and elaſticity, being "indeed moſt probably a quantity of the uni-

" verſal elaſtic matter, incorporated with fine " parts of the blood, ſeparated in the brain, " and lodged in the fibres of the nerves *."

Theſe hypothetical notions of MEAD were once believed in; but they are not now, when conjecture goes for nothing.

FONTANA aſſerts, that the blood is the ſeat of the action of poiſons; and that when they are introduced into it, they bring on death, by deſtroying the irritability of the muſcular fibres.

He founds his opinion on experiments, made by injecting ſome of the poiſon of a ſerpent into the jugular vein of animals; the effects of which, were immediate death.

He aſſerts alſo, that this poiſon is intirely innocent to the nerves. This opinion he ſupports by having laid bare the ſciatic nerve, and after wounding it, he applied ſome of the poiſon to it. The ſymptoms and phænomena that followed, he ſays, differed in nothing from thoſe which appear from a ſimple wound of the nerve with the point of any inſtrument; death being the conſequence in both caſes alike.

* Introduction to his Mechanical Account of Poiſons.

He

He confeſſes, that the ſame poiſon as was injected into the vein, made not the leaſt change in the blood, out of the body, though mixed with it the inſtant it came from the orifice, and received into a veſſel warmed to the heat of the blood.

I would aſk this perſevering experimenter, how it happens, that hæmiplegia, and other degrees of palſy, are ſometimes cauſed by the bites of vipers, if the nerves have no concern in the operation of the poiſon?

Whence ariſe palpitations, tremors, vertigo, cold ſweats, incontinence of urine, vomiting, and purging, from the ſting of a ſcorpion, or the bite of a ſpider?

How comes it, that a polypus, having no teeth, kills a water worm, an animal tenacious of life, by only touching it with his mouth or lips?

Beſides, olive oil, and a thouſand other equally innocent things, injected into the jugular veins cauſe ſpeedy death.

FONTANA's idea, "that the *Lunar Cauſtic* is "the true ſpecifical remedy againſt the dread-"ful poiſon of the viper," and his reaſoning thereon, are equally inconcluſive.

The

The *Lunar Cauſtic* is not an "antidote to "this venom," as he affirms, as acting by any ſpecific virtue. But like the *Lapis Infernalis*, or any other powerful cautery, it deſtroys all organization within the ſphere of its action; and by rendering the part affected, no longer a living part, creates inſenſibility to the operation of the poiſon, and an incapacity of communicating it.

It has always been a matter of ſurpriſe to me, that HILLARY ſhould ſay *Canine Madneſs* "is ſo "frequently ſeen in moſt hot countries, and "eſpecially in the Weſt-Indies, that it may be "ſaid to be endemial *;" which is ſo far from being true, that if HILLARY, who treats of it, and relates ſeveral caſes that were under his care in Barbadoes, had not been a man of good character, I ſhould have doubted whether he had ever ſeen a mad dog in the Weſt-Indies.—I am aware that HUGHES, in his *Natural Hiſtory of Barbadoes*, ſays, this diſeaſe was there in or about the year 1741; and that a cow, in an hydrophobia, was cured by pouring a pail-ful of cold water down her throat †.

* On the Diſeaſes of Barbadoes, p. 245.

† P. 33.

During

During my reſidence in the Weſt Indies, I never heard of the diſeaſe; and from the inquiries I have made, I am certain that there has been no canine madneſs in many of the iſlands, if in any of them, for fifty years, before the year 1783; and I am not ſatisfied with the authority which informs me it was ever there before that year. On the immenſe continent of South America, it has never been ſeen. ULLOA ſays, "the people there expreſs their aſtoniſhment "when an European relates the melancholy "effects of it*:" and POUPPE DESPORTES, who practiſed phyſic in *Hiſpaniola* from 1732 until 1748, ſays, in that iſland they are intirely ignorant of it†.

It is certain, that diſeaſes undergo changes and revolutions. Some continue for a ſucceſſion of years, and vaniſh when they have exhauſted the temporary, but ſecret, cauſe which produced them. Others have appeared and diſappeared ſuddenly; and others have their periodical returns.

* Book V. ch. 6.

† "A *Saint Domingue* on a l'avantage de ne pas connoître "la rage." Hiſtoire des Maladies de *S. Domingue*. Vol. II. p. 157.

The

The *Nervous Remittent Fever*, the great endemic of Jamaica, entirely changed its type in 1770. It was then accompanied by an immenſe miliary eruption, and ſeveral other circumſtances, which had never been obſerved before that time. It raged with unuſual violence, and carried off almoſt all the young people who were ſeized. It returned, with its new attendants, in the ſpring and ſummer of the two ſucceeding years; but has not been there, in the ſame form, ſince.

In the ſpring of 1783, canine madneſs broke out in *Hiſpaniola*; and in the month of June in Jamaica, where it raged until March, 1784. It was ſaid at firſt, that it was brought to Jamaica from Hiſpaniola; but experience proved the fact to be otherwiſe.

The common notion that this diſeaſe among dogs can only proceed from the poiſon of an external bite, or that it originates in ſome particular dog, from internal diſeaſe, and from thence is diſſeminated, has excluded the idea of ſpontaneous madneſs, ariſing from ſome peculiar influence in the air. But this influence of the air generated the canine madneſs in the year 1783, in the Weſt-Indies; for it was general, and many dogs were ſeized with it, that had

had no communication with others: and ſome dogs which were brought from Europe, and North America, and that were not on ſhore, went mad on their arrival in the harbours of the iſlands.

The ſame atmoſpheric cauſe produces this diſeaſe almoſt every year among foxes, wolves, and dogs, in many parts of Europe; ſome inſtances of which I have ſeen in my travels.

In *Venice* I found the common opinion to be, that the diſeaſe is often occaſioned by thirſt: for which reaſon all barbers, ſhoe-makers, and coffee-houſe-keepers, are obliged to have a ſmall tub, or pan of water, before their doors, particularly in hot weather, that the dogs running about the ſtreets may drink when they want, as there are no places in that city where they can otherwiſe ſupply themſelves with freſh water.

In 1783 this diſeaſe was general in Jamaica.—Many negroes were bitten, and died *Hydrophobous*.

A boy belonging to Mrs. *Inglis* in Kingſton was bitten by a little dog ſuppoſed to be mad, which was therefore killed. The bite, or rather ſcratch, was not larger than one made by a pin,

a pin, being only a raſure of the ſkin, by a tooth. It was thought too inconſiderable to be hurtful. Four months afterwards the boy was ſeized as if he had got a cold, and ſoon after ſymptoms of a *Tetanus* appeared. He died on the third day, but had no ſymptom of *Hydrophobia*.

An attorney-at-law in Kingſton was bitten by his own dog. The bitten part, which was in the ball of the thumb, was cut out. He was then ſalivated by mercury, externally and internally uſed; and he had no ſymptoms of diſeaſe. One of his negroes was alſo bitten, and treated in the ſame manner, and with the ſame ſucceſs.

Many hogs and goats were bitten, and died mad.

An horſe belonging to Mr. *Edward Eaſt*, in Liguanea, was bitten, and being ſeized with madneſs was ſhot. Another horſe, belonging to Mr. *Andrew Cathcart*, a merchant in Kingſton, was bitten. He broke out of the ſtable and ran about mad, until, by beating his head againſt a wall, he killed himſelf.

In the cure of the bite of a mad dog, the local treatment is alone to be depended on; and that local treatment the ſame which I have already

already related in the cure of the bite of deadly venomous ſerpents *.

Mercury is of no uſe; nor have any of the famous ſpecifics that have been impoſed on mankind ever produced any effects that could be depended on. The ſooner the bitten part is deſtroyed the better. But where application has been omitted for ſome time, and even when the bitten part is healed, it ſhould be removed by taking out the fleſh all round, deeper than the wound originally was, by the *Lapis Infernalis*, and ſhould be dreſſed with acrid dreſſings, and be kept open, and digeſting, for many weeks. This method of treating the bites of mad animals, if in a part where it can be uſed, will, I am convinced, from my own practice, prevent their fatal effects; applied at any time previous to the firſt ſymptoms, that forerun a general affection, which ends in hydrophobia, and yields to no remedy yet diſcovered.

The coaſts and rivers of all the iſlands abound with a vaſt variety of excellent fiſh; and thoſe of Jamaica are almoſt free from poiſonous fiſh, which much infeſt the coaſts of ſome of the other iſlands.

* Page 32.

I wiſh

I wiſh I could ſay that the rivers were exempt from *Alligators*, and the coaſts and harbours from *Sharks:* but that is not the caſe, and people ſhould never venture into rivers, nor harbours, to bathe, as terrible accidents frequently happen in the Weſt-Indies, from theſe horrid creatures.

A negro woman, belonging to Mr. *Kennion*, in the Pariſh of St. Thomas in the Eaſt, ſome years ago, was ſeized as ſhe was waſhing her linen in *Plaintain-Garden* River, and torn in pieces by an alligator. She was advanced a little way into the river, and as ſhe was ſtooping down with her hands in the water, the alligator ſeized her by the arm, dragged her away, and ſmothered her. From the depth of the water, and the muddineſs of the bottom, though the accident happened in the preſence of many people, they were unable to aſſiſt her.

Miſchief from ſharks happens almoſt every day, in ſome of the iſlands.

During the American war, in 1780, while the *Pallas* frigate was lying in Kingſton Harbour, a young North American jumped overboard one evening to make his eſcape, and periſhed by a ſhark in a ſhocking manner.

He had been captured in a ſmall veſſel, loſt all his property, and was detained by compulſion in the Engliſh navy, to ſerve in a depredatory war againſt his country. But he, animated with that ſpirit which pervaded every boſom in America, reſolved, as ſoon as he arrived at ſome port, to releaſe himſelf from the mortifying ſtate of employing his life againſt his country, which, as he ſaid when dying, he was happy to lay down, as he could not employ it againſt her enemies.

He plunged into the water; the *Pallas* was a quarter of a mile from the ſhore. A ſhark perceived him, and followed him, very quietly, till he came to a ſtate of reſt, near the ſhore: where as he was hanging by a rope, ſcarcely out of his depth, that moored a veſſel to a wharf, the ſhark ſeized his right leg, and ſtripped the fleſh entirely away from the bones, and took the foot off at the ancle. He ſtill kept his hold, and called to the people in the veſſel near him, who were ſtanding on the deck and ſaw the affair. The ſhark then ſeized his other leg, which the man by his ſtruggling diſengaged from his teeth, but with the fleſh cut through down to the bone, into a multitude of narrow ſlips. The people in the veſſel threw billets of wood into the water, and frightened the ſhark

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away. The young man was brought on ſhore; I was called to him; but he had loſt ſo much blood before any aſſiſtance could be given him, that he expired before the mangled limbs could be taken off.

A few weeks before this accident happened, a ſhark, of twelve feet in length, was caught in the harbour; and on being opened, the entire head of a man was found in his ſtomach. The ſcalp, and fleſh of the face, were macerated to a ſoft pulpy ſubſtance; which on being touched ſeparated entirely from the bones. The bones were ſomewhat ſoftened, and the ſutures looſened.

It is evident that digeſtion in theſe animals is not performed by trituration, nor by the muſcular action of the ſtomach; though nature has furniſhed them with a ſtomach of wonderful force and thickneſs, and far exceeding that of any other creature. Whatever their force of digeſtion is, it has no effect upon their young ones, which always retreat into their ſtomachs in time of danger.

That digeſtion is not performed by heat in fiſh, is equally evident. Being on the Banks of Newfoundland in Auguſt, 1782, I opened many Cod-fiſh, and ripped up their ſtomachs juſt as they came alive out of the water; in

which were generally found ſmall oyſters, muſcles, cockles, and crabs, as well as ſmall fiſhes of their own, and other ſpecies. The coldneſs of the ſtomach of theſe fiſhes is far greater than the temperature of the water out of which they are taken; or of any other part of the fiſh, or of any other ſubſtance of animated nature I ever felt. On wrapping one of them round my hand, immediately on being taken out of the fiſh, it cauſed ſo much aching and numbneſs, that I could not endure it long.

In the Weſt-Indies, where a choice of ſituation for reſidence can be made, the more elevated, and the further removed from all kinds of water the better. Stagnant waters, and ſwamps, load the air with pernicious vapours, that are productive of obſtinate intermittent fevers, diſeaſes of the liver, and putrid diſeaſes. This was woefully experienced in Jamaica, when the naval hoſpital of that iſland was at *Greenwich*:---and in the autumn of every year, the air of the ſwamps and marſhes to the weſt of *Kingſton*, and about the *Ferry*, extends its baleful influence to all the neighbouring habitations. I, among many other people, in paſſing that inſalubrious diſtrict, a little before the riſing ſun, have had a ſhivering and coldneſs, as in an ague. I have ſuffered the ſame effect in croſſing the lethiferous *Pontini* fens

near *Terracina*, between Rome and Naples, juſt at the break of day *.

People, whoſe occupations or habitations are in, or near, low, marſhy places, ſhould ſleep from them as often as poſſible; and always in the rainy and autumnal ſeaſons. Fevers, and other diſorders, acquired in theſe ſituations, are always moſt ſpeedily, and often only to be, cured by removing the patient to ſome healthful place, in a pure air, the inſtant he is attacked, or before the diſeaſe is ſo far advanced as to make removal ineffectual, or dangerous. But if there be danger in removing a patient, while labouring under a fever, there is alſo danger in ſuffering him to remain in a ſituation noxious, from local circumſtances, to the human frame. ASCLEPIADES adviſes carrying the patient out in the air, in common practice, even in the *Ardent Fever*, and in the beginning of it; but CELSUS diſapproves of this doctrine, and thinks it only admiſſible when the tongue is moiſt, where there is no tumor, nor hard-

* The greateſt degree of cold is commonly a little before, or at the time when, the ſun juſt appears at the margin of the horizon. This phænomenon ariſes from the ſolar rays, warming the ſuperior region of the atmoſphere, only, at their firſt approach, and cauſing a rarefaction there; from which the cold and moiſt vapours, collected in the night, fall in an increaſed quantity near the ſurface of the earth.

neſs,

neſs, nor pain in the viſcera, head, or præcordia, or in any other part of the body, unleſs it be a nervous pain, and then only in the remiſſion of the fever *.

As the places where wood and water are obtained in hot climates, are generally ſwampy and unhealthful, ſailors who are ſent from their ſhips on ſhore to procure thoſe articles, ought never to be permitted to ſleep there;---and if they are ſeized with any diſorder, they ſhould be immediately removed on board their veſſel. Many inſtances of great mortality have happened from laying in wood and water in theſe climes; and ſhips have been often obliged to haſten from an unhealthful coaſt, and put to ſea, with ſcanty allowance, without people in health ſufficient to do their duty.

The aſpect of an houſe may be towards any other quarter than the Weſt; but this will depend on ſituation, in ſome meaſure, and the conſtruction of the building. For if it have only a ſingle roof, in a long narrow range from North to South, and that the front be to the Eaſt, the ſun will bear all his force on its largeſt ſurface from ſix to eight in the morning; and, for the ſame reaſon, on the Weſt ſide, from four

* Lib. II. cap. 15.

to ſix in the evening: and render it exceſſively hot. If it range from Eaſt to Weſt, the morning and evening ſun will have leſs ſurface to act on, and the building muſt neceſſarily be cooler; as the meridional ſun acts nearly the ſame on the roof, let it be placed how it may. But the Eaſt ſhould not be excluded on account of the breeze, and the afternoon ſhade and coolneſs; then, if the building be ſingle, a North front, with windows, piazza, and balcony to the Eaſt and South, has the advantage. But if the building be large and double, an Eaſt front is on the whole the beſt plan for an houſe in the Weſt-Indies.

Theſe obſervations are equally applicable, whether the building be intended for a dwelling-houſe, or barracks for ſoldiers, or an hoſpital: and what BACON ſays of houſes in England, is pertinent to the ſame ſubject in the Weſt-Indies.---"It were good for men "to think of having healthful air in their "houſes; which will never be if the rooms be "low-roofed, or full of windows and doors: for "the one maketh the air cloſe, and not freſh, "and the other maketh it exceedingly unequal, "which is a great enemy to health *."

* Cent. 10. exp. 937.

The

The dread of earthquakes, together with the conſideration of œconomy, in the Weſt-Indies, induce many people to build their houſes very ſlight, and chiefly of wood; by which means they are ſubject to extreme heat by day, and extreme cold by night. Large rooms to keep the rays of the ſun at a diſtance, and thick ſtone, or brick walls, to prevent their pervading, conſtitute the only requiſites for a cool, healthful, and pleaſant houſe in hot climates: for in rooms thus conſtructed, a great volume of air is cooled and condenſed, that cools and temperates the external hot air, which is admitted for its renovation.---Such are the public buildings, hoſpitals, and houſes in Italy*; from the amplitude of which, the inhabitants of Rome and other places, beſides qualifying the parching heat in ſummer, ſhut out the Sirocco and other unwholeſome winds, and often ſecure themſelves againſt the reigning epidemic; and againſt heavineſs of the head, catarrhs, and inflammations of the eyes, diſeaſes which afflict particular towns and ſituations, when moiſt ſouthern winds prevail.

* On an hot day in ſummer, the thermometer will be at 62° in St. Paul's church, when it is at 70° in any common houſed, 75° on the ſhady ſide of a ſtreet, and 80° in the ſun.

That mountainous ſituations are very healthful in the Weſt-Indies, we have many proofs; and that people who have been ill in the lowlands, ſoon recover their health in the mountains, and avoid the trouble and expence of coming to Europe.

At Mr. *Hinton Eaſt*'s mountain, above the banks of Hope River, in Jamaica, the temperature of the air being at about 75° is moderate and agreeable. In a garden there, belonging to this worthy gentleman, there are a multitude of European productions in their native beauty. There are alſo the *Mango*, *Mangoſtan*, *Jack tree*, *Camphire tree*, *Gum Arabic tree*, and ſeveral of the ſpices of India; among which, the *Cinnamon tree* flouriſhes in the higheſt perfection: two plants of which, each about ſix inches long, were brought to the iſland in June, 1782, in a French veſſel bound from the iſles of *France* and *Bourbon* to *Hiſpaniola*, but taken and made a prize of by the *Flora*, an Engliſh frigate. Theſe plants, with ſome others, were intended for the Governor of *Hiſpaniola*. This is the introduction of that valuable tree at Jamaica, which ſuits ſo well with its growth, that the two original plants bloſſomed, Mr. *Eaſt* informed me, and bore ſeeds in 1785, from which he has produced

duced many others: and it is probable, that the birds, which have every year robbed his trees of a conſiderable quantity of ſeeds, will plant many more in the woods, and that *Cinnamon trees* will be found growing wild there, and give riſe hereafter to doubts concerning their origin.

If people, when they retire to theſe mountains for health, could leave their cares behind, and avoid the importunity of buſineſs, which is very difficult from the proximity of their homes, there would be leſs occaſion for European voyages than is generally believed. But they are too near the intereſting ſcene which perhaps diſturbed their health, unleſs they can reſolutely determine to have no communication with their counting-houſes and plantations: for in reality, coming to Europe, to the generality of people, and where a ſea-voyage is not abſolutely neceſſary, is only cutting off the communication with care and anxiety, and giving the mind that relaxation which is neceſſary for the reſtoration of health.

Some of the mountains at the back of *Kingſton* in Jamaica, and in many other parts of the iſland, are remarkably healthful. At *Cold Spring* Mountain, which is computed to be about

about 1400 yards above the level of the ſea, the thermometer is ſometimes much below 60°, though the diſtance is not more than two hours ride from Kingſton *, where it is on a medium at 83° of *Fahrenheit*'s, or 22°½ of *Reaumur*'s ſcale.

The *Maroon Negroes*, who live in the different mountains in that iſland, are active, enterpriſing, and hardy. But as thoſe mountains are very fertile, and all the neceſſaries of life procured with eaſe, their wants are ſupplied without trouble, and they are equally ſtrangers to affluence as to induſtry.

The inhabitants who cultivate the Coffee, and Proviſion Mountains in *Liguanea*, when they deſcend to the plains, have the looks of newly-arrived Europeans.

The troops that are ſtationed in the iſland ſhould have barracks in theſe cool mountains, where they might uſe exerciſe, keep their health, and live well by cultivating proviſion gardens for themſelves, as land is cheap; inſtead of being placed in the hot lowland towns, where they can neither be made good

* Kingſton is in N. lat. 18° 15′. W. long. 76° 38′.

ſoldiers

ſoldiers nor good citizens, and where they rot and periſh from diſeaſes brought on by exceſſive heat, indolence, drunkenneſs, and debauchery.

The ſame cauſe, in the years 1781, 1782, and 1783, made ſuch havoc among the French and Spaniſh troops at the *Cape* in Hiſpaniola, that they were obliged to be diſperſed about in the country, or elſe it is thought that very few of them would have been fit for ſervice, or ever have returned to Europe. The French government, I have been informed, has ſince had it in contemplation to erect barracks and hoſpitals for their troops in the quarter of *Dondon*, a mountainous ſituation, eight leagues from the *Cape*, and to remove the garriſon there, or at leaſt to make it a retreat for convaleſcents.

I have had many opportunities of knowing the neceſſity for ſome regulation of this ſort in Jamaica; but it ſhould be performed in time of peace, for in war there is nothing but confuſion. The good effects that would reſult from it may be judged of already, by the health of the troops that are quartered at *Stoney-Hill* barracks.

In

In time of peace, the hot lowland and ſea-coaſt poſts, require no defence. It is then that health alone ſhould be conſidered; and if the cool mountains are the only places where it can be preſerved, there is no reaſon to ſacrifice men, at that time at leaſt, in Jamaica.

In time of war it is otherwiſe; the frontier fortreſſes muſt be garriſoned. But then the troops ſhould be firſt ſeaſoned in the mountains, and be brought down to the plains, when, by being gradually inured, they are better able to bear duties in the ſeverity of the heat.

This reflection, I know, extends only to the iſland of Jamaica; for the other Engliſh colonies have not the advantage of ſuch lofty, ſpacious, abundantly watered mountains, as variegate and fertilize that iſland.---For which reaſon, the troops, intended for their garriſons in time of peace, or for their defence in war, or to carry on any expedition againſt an enemy in that part of the world, ſhould be firſt ſent to the healthful *Bermudan* Iſlands, and remain there for ſeveral months, or for a year, if poſſible, to acquire a proper ſeaſoning for tropical operations; from whence they might be tranſported to almoſt any part of the Weſt-Indies, in a week or ten days *.

* The *Bermudas* are in N. lat. 32°, and in W. long. 65°.

I am

I am ſenſible, that reformations are often eaſily planned on paper, that are very difficult in the execution.—The obſtacle to ſurmount in theſe ſuggeſtions is, the want of ſufficient barracks at the *Bermudas*, and in the mountains of *Jamaica*, for the accommodation and ſeaſoning of troops. But this difficulty is eaſily remedied.—Then ſucceſsful enterpriſe might be looked for in war, and the ſecurity of our poſſeſſions would be inſured,—and then, indeed, the end and utility of troops, in the Weſt-Indies, might bear ſome proportion to the expence; and the good ſenſe which ought to diſtinguiſh government, would be turned to an object, not leſs intereſting to ſound policy, than to œconomy and humanity,—for at preſent the troops are ſent thither only to be buried: and let it be remembered, that this mode of interring a ſoldier, is more coſtly to his country, than a ſepulchre at home would be, adorned with a monument of marble.

It is not ſimply, to heat alone, except when people are openly expoſed to the action of the rays of the ſun, that diſeaſes in general owe their origin in theſe climes; and even then, the *Ictus Solis*, or *Coup de Soleil*, though productive of dangerous fevers, has ſeldom been known

known to kill any perſon ſuddenly: which has been the caſe in *Philadelphia*, and many other parts of North America*. I have felt equal inconvenience from heat at *Venice*, *Naples*, *Rome*, *Montpellier*, and alſo in *Virginia*†; and experiments have ſhewn, that the human frame can bear far greater degrees of heat than any climate produces, without injury: and that cold alone can be ſuſtained without deſtroying life, even when ſome of its functions have been ſuſpended for a conſiderable time.

But it is the tranſitions from one to the other, which are ſo annoying to human nature. It is theſe tranſitions between the tropics,

* I ſaw a man lately at *Straſbourgh*, who has been inſane for more than a year, in conſequence of an *Ictus Solis*. The fatal effects of being expoſed to the ſolar rays, have been experienced in various countries. In England, in the year 1707, on the 8th of July, many people at work, and many horſes and oxen, were killed in the fields by the ſun's rays; and at *Pekin*, in the year 1743, between the 14th and 25th of July, eleven thouſand people periſhed in the ſtreets, from the ſame cauſe.

† TOALDO ſays, the heat of the ſun was ſo great at *Montpellier*, on the 30th of July, 1705, that eggs, expoſed to its action, were hardened as if they had been boiled. CHALMERS, in his *Account of the Weather and Diſeaſes of South Carolina*, p. 17. ſays, at *South Carolina*, he has ſeen "a beef-ſteak laid "on a cannon, expoſed to the ſun for twenty minutes, "deprived of its juices, and to be over-done."

ſmall

ſmall as they are, out of the ſun, that give riſe to thoſe diſeaſes which are ſo fatal to unſeaſoned Europeans; becauſe their fibres and fluids are not qualified to ſuffer the diurnal revolutions in the frame, from the various impreſſions of the atmoſphere, as condenſed, or rarefied, by the abſence or preſence of the ſun: as brought from the ſea by day, or loaded with damp and frigorific particles from the land by night.

Beſides, living in an hot ſteam as it were, their bodies are filled with it; and the turgidneſs and firmneſs of the capillary veſſels of newly-arrived Europeans, require ſome time to render them ſufficiently pervious to let out the inflamed and rarefied parts of their rich blood by the pores, faſt enough to cool it and bring it down to a ſtate ſuitable to the climate, for the purpoſes of the well-being of the body: from which they are ſubject to inflammatory diſeaſes of the moſt violent kind, upon the ſlighteſt check to perſpiration.

To ſupply the ſurface of the body with energy to carry on the important office of perſpiration, nature has eſtabliſhed a greater circulation towards the ſkin, in hot climates, than is neceſſary in cold climates.

Thus

Thus the internal parts of people, who have lived long in hot climates, are drained, and loſe much of their natural heat and ſuſceptibility. They nauſeate inſipid things, and can bear the greateſt internal ſtimulus without inconveniency. Hence ariſes the ſtrong deſire for ſalted meats, and alſo for peppers and ſpices, with which nature has bountifully ſupplied theſe climes.

From the great relaxation and debility of the nervous ſyſtem in tropical climates, the moſt trivial change of the air, which makes but a ſmall variation on the thermometer, is productive of ſuch a ſenſation of cold, or heat, as is no more to be accounted for by the operation of thoſe powers on the thermometer, than the influence of the moon: and there is not vigour enough in the extreme fibres and veſſels, to reſiſt and overcome the ſmalleſt oppreſſion of their functions. If the heat of the air ſhould ſink to 72°, and remain ſtationary for a day, in places where the medium is 80°, it produces an aguiſh or chilly ſenſation, that is hardly to be deſcribed. In the habitable mountains, where the air is ſcarcely ever ſo cool as what is called temperate in Europe, people who go there ſuddenly from the lowlands, find the

the coldneſs at firſt hardly ſupportable; and that intolerable coldneſs which is felt on the ſummit of the *Blue Mountains* (the higheſt land in Jamaica, about 2400 yards above the level of the ſea,) is but the effect of the ſuddenneſs of the change from the ſcorching heat below: for the thermometer has never been known to be lower there than 42°, and that even at night, during a North wind, in the month of February.

The leaſt change in the wind alſo to the Weſt, or South, from the Eaſtern points, whence, by its conſtantly blowing, the body becomes naturalized to it, though there ſhall be no difference found by the thermometer, whatever, is inſtantly felt, with languid, heavy, and feveriſh impreſſions; ſimilar to thoſe produced by the Sirocco wind in Italy.

In this ſtate of body, heat, which has deſtroyed the tone of the nerves, and graduated the fluids to its own ſtandard, is neceſſary for exiſtence; but it muſt be uniform: and one of the reaſons that the rains are ſo fatal between the tropics is, that they increaſe both the heat of the day, and the coldneſs of the night, and make more variety in the atmoſphere then, than there is at any other time.

Heat and moiſture, uninterrupted, are not the cauſe of ſo much miſchief as is attributed to them; for they carry a powerful remedy with them, which is perſpiration. The miſchief they produce is, that they diſpoſe the body to the ſlighteſt impreſſions from cold; and, however paradoxical it may appear, cold is the cauſe of almoſt all the diſeaſes in hot climates, to which climate alone is acceſſary.

It is true, that the thermometer has ſhewn much higher degrees of heat in the ſhade, without the tropics, and that there are greater tranſitions from heat to cold on certain days in many countries, and particularly on the continent of North America, than ever happened between the tropics.—In *Rome*, on the 3d of October, 1787, the thermometer, at ſix o'clock in the morning, was at 75°, in my chamber window; and on the following morning, at the ſame hour, and in the ſame place, it was down at 55°. This difference was occaſioned by a torrent of rain which fell, for there was no change in the wind; that being on both days from the South. Such tranſitions never happen between the tropics.

In

In America, though natural tranſitions are prejudicial, yet the Indians find artificial tranſitions otherwiſe. Their remedy for a cold, fever, ague, or rheumatiſm, is to ſweat themſelves ſeverely in their ſweating ſtoves, or ovens, for ſome time, and then to plunge, while ſweating, immediately into a river, or cold water, even in the depth of winter. This is alſo a practice in *Finland* and *Ruſſia*. The Indians, in hotter climates, bury themſelves in the hot ſand to ſweat themſelves, and then plunge into cold water.

When I was at *Lauſanne*, in 1786, the candid and liberal TISSOT told me, that the tranſitions from heat to cold are there ſometimes ſo great, by ſudden changes of the wind from *Mont Jura*, that invalids, and convaleſcents, feel conſiderable ill effects from them: and that in pulmonic diſorders, thoſe changes have produced the moſt dangerous conſequences.

An eaſtern wind in England is perceived by invalids in their very beds. Sudden changes and tranſitions, in every climate, are prejudicial to the human frame. In temperate climates, their influence is exerted chiefly on the weak, the relaxed, and the aged.—In hot climates,

every perſon is weak and relaxed; and infirmities, that are unknown in temperate regions where the varied ſeaſons correct each other, until long life has exhauſted the vital flame, here make their unwelcome viſits to people of every age.

An hot and moiſt *Sirocco* wind, immediately ſucceeding a cold dry *Tramontana*, in ſome ſituations in Italy; and the cold ſharp *Miſtrau*, and *Biſe* *, in many parts of the South of France, and in the neighbourhood of the Alps, have, to my knowledge, deſtroyed ſeveral, and injured a multitude of debilitated people, who have been injudiciouſly placed, or careleſſly expoſed, when ſent thither from other parts of Europe for their health.

The thoughtleſs cuſtom in England, of ſending people in the latter ſtages of diſeaſes to thoſe countries, from their friends and families, annually receives the tribute of many lives, from theſe and ſimilar cauſes. Towns in warm ſituations, within the reach of winds from the Alps, and other gelid mountains, at ſome ſeaſons of the year, are alſo graves to people who

* A *Sirocco* is a S.E. by S. wind; a *Tramontana* a N.N.E. wind; a *Miſtrau*, or Miſtral, as it is called in Provence, is the Italian *Vento Maeſtro*, or N.W. wind; a *Biſe* is a N.E. wind.

go

go to them in decays of the lungs. For ſuch ſcrophulous and conſumptive diſorders as are endemics of our atmoſphere, ſea voyages ſhould be made, or ſmall iſlands, remote from continents, reſorted to, where the air, purely marine, is unclogged with vapours from the land, and where the climate is not only warm, but uniform; ſuch as *Madeira* *: or others in ſtill warmer latitudes, which I have ſometimes known, when the diſeaſe had not too far advanced, to anſwer better.

Change of climate is undoubtedly neceſſary in all chronical diſeaſes of the lungs; but there are few other diſeaſes that originate in England, in which the climate of England, of which there is great variety †, according to local circumſtances, with change of place, and horſe-back exerciſe, is not equal to any other. Foreigners have an erroneous notion of the climate of England. Perhaps our atmoſphere is not mild enough for the tender fibres of weak bodies; and for broken conſtitutions

* *Funchal*, the capital of Madeira, is in N. lat. 32° 33′. W. long. 16°.

† The ſoftneſs of the atmoſphere, in general, and the mildneſs of the ſeaſons frequently, in the weſtern parts of England, particularly at *Penſance* in Cornwall, cannot be conceived by thoſe who have reſided in the eaſtern diſtricts only.

where a decompoſition of the frame has begun to take place.—But, take it for all in all, the climate of England is the beſt on the habitable globe.—For by what compariſon is a climate to be eſtimated, which produces ſuch a race of people as the Engliſh, and in which almoſt every ſpecies of animal arrives to the utmoſt perfection?

The *Cœli mutatio*, or change of climate, ſo much commended by CELSUS, and the beſt ancient writers, is a very different thing from ſudden and uncertain tranſitions in the ſame climate; and muſt ever be attended with the greateſt advantages, in all diuturnal diſorders: and particularly in thoſe of the endemial kind, or ſuch as are united with ſome conſtitutional defect, or any hereditary, or endemical taint *. And though conſumption of the lungs, the principal, and moſt deſtructive endemic of England, is rarely an intratropical primary diſeaſe, yet it is frequently a ſecondary and conſequential one, and requires the ſame expatriation: for the remedy is ſeated in the air which we breathe, and that ſurrounds us, and is, in

* I have often known inveterate *Lues Venereæ*, particularly when ſeated in glandular parts, that could not be ſubdued by medicine in England, to yield to the climate of the Weſt-Indies without any medicine whatever.

my

my opinion, the ſame in every part of the world.

It is remarkable, that original conſumption, in particular, ſhould ſo often become incurable by reliance on regimen, or medicine, when it always gives ſufficient warning, and time, for quitting the country, whoſe atmoſphere was the cauſe of it. Phyſic will certainly, in acute diſeaſes, do much:—but what medicine can change the nature of climate, or the peculiar organization of a body, to which it is obnoxious?

Reaſon, without the aid of medical light, ſuggeſts, that the remedy for an endemic of a moiſt atmoſphere, is a dry one;—of an hot, a cold one;—of a light, an heavy one; of an inland ſituation, a maritime one; and the reverſe, when circumſtances are reverſed.—But the change muſt be graduated to the conſtitution; and alſo to the ſtate of the diſeaſe: for, when that is far advanced, extremes are fatal.

Celsus recommends a thick air, when the diſeaſe originated in a thin one; for which reaſon he ſent the conſumptive of Italy, to the more denſe atmoſphere of Alexandria *: where the Romans chiefly reſorted in pulmonic diſ-

* Lib. III. cap. 22.

eaſes. But PLINY, in one place, attributes the principal benefit that aroſe from this practice to the air of Egypt being impregnated with terebinthinous effluvia from the pine foreſts *; and in another place, to the length of the ſea-voyage: and ſays, that ANNEUS GALLIO, having a ſpitting of blood, went thither on that account †.

GALEN adviſes *Tabiæ* ‡, as a reſidence for Roman conſumptive people:—the air of which place, beſides the reſtorative quality of the milk it affords, I believe to be an admirable contraſt to the moiſt heavy air of Rome, and the Campania.

After extolling the milk of *Tabiæ*, the excellence of which, he ſays, aroſe from the dryneſs of the air, the goodneſs of its paſtures, and the abundance of balſamic and healing herbs that grew there; which herbs alſo, he ſays, imparted a ſalubrious quality to the air; he proceeds to deſcribe the advantages of its ſituation. He ſays, "It is moderately high,

* Lib XXIV. cap. 6. Hiſt. Nat.

† Lib. XXXI. cap. 6. Hiſt. Nat.

‡ This place at preſent is called *Stabia* by the Italians; it is a little village not far from *Pompeia*, on the N.E. ſide of the bay of Naples.

"and

" and ſomething more than thirty furlongs " from the ſea, which it fronts; and is ſituated " near the deep part of the bay, between Sur- " rentum and Naples, but nearer to Surrentum. " The ſide of the hill is large, extending in " length to the ſea, not intirely to the ſouth, " but a little inclining to the weſt; and is de- " fended from the northern and eaſtern winds. " It is near Veſuvius; the fires of which " greatly conduce to the dryneſs of the circum- " ambient air. There is neither ſtagnant wa- " ter, nor marſh, nor any river of conſequence " in its neighbourhood. Veſuvius defends it " from the north winds; and the cinders, and " other materials which are emitted with its " fires, being blown thence towards the " ſea, by thoſe winds, contribute to dry the " air *."

After

* I do not know how far the adjacent country to Veſuvius might, in GALEN's time, be affected by it;—but at preſent, unleſs at the time of a great eruption, there is very little effect to be perceived in the air, until near its top: round the ſummit of which, there is a thin covering of flowers of ſulphur, of a deep yellow, and in ſome places of an orange colour, precipitated from the vapour that is thrown up from the internal fires. The vapour itſelf ſmells ſtrongly ſulphureous, and produces a ſenſation ſimilar to the evaporation of ſpirit of ſalt, or aqua fortis: it is ſo powerful, that, in looking down into the crater, I have been nearly ſuffocated. Breathing through an handkerchief, is the practice of the *Ciceroni della montana*; and I found

After this judicious deſcription, that great man, ſoaring above the narrow limits that terminate the views of common minds, ſays, "any elevated ſituation, in any other temperate climate, dry as this is, not far from the ſea, neither ſo near as to be expoſed to the violence of its winds, nor ſo low as to be ſubject to receive the vapours of any low grounds, not fronting the north, nor yet too much expoſed to the meridian ſun, may produce the ſame ſalutary effects; but for the

I found it enabled me to ſtay longer on the top than I could otherwiſe have done. My watch-chain, being of highly poliſhed ſteel, was inſtantly turned black on the top of the mountain, and continued afterwards of a yellowiſh, ruſty, bronze colour. The thermometer, at *Reſina*, and at the baſe of Veſuvius, was 73°; and on the top of Veſuvius, which is about 1312 yards above the level of the adjacent ſea, it was 65°. This was on the 28th of September, 1787.

The moſt terrible eruption of Veſuvius happened before GALEN's time, in the year 79, and in the reign of TITUS; when the cinders were carried by the winds, not only to Rome, but to Africa and Egypt. The fiſhes were deſtroyed by the heat of the ſea in the bay of Naples; the birds were ſuffocated in the air: the celebrated and ancient towns of *Stabia* and *Herculaneum*, and alſo *Pompeii*, while the people were in the theatre, were covered with cinders. It was at this eruption that PLINY the hiſtorian loſt his life. He commanded the Roman fleet at *Miſenum*; and went to examine the cauſe and progreſs of the conflagration: but, by approaching too near, he was ſuffocated, cloſe by *Herculaneum*.

"improve-

" improvement of the milk, and meliorating " the air, the grounds ſhould be planted with " ſalubrious herbs and fruits: ſuch as Agroſtis, " Lotus, Polygonon, Meliſſophyllon, Lentiſcus, " Arbutus, Rubus, Hedera, Cytiſus," &c. *.

Beſides maritime ſituations, long voyages, change of climate, and milk diet, the ancients were alſo ſolicitous concerning exerciſe, geſtation, and motion, in conſumptions; the degrees and modes of which, applicable to various other diſeaſes, were proportioned to the ſtrength of the patient †.—But thoſe err exceedingly who attribute to the motion of ſailing, the benefit which is often derived in different diſeaſes, from ſea-voyages, and which I believe depends ſolely upon the ſea air. It is from the " aer purus," in the " navigatio " longa ‡;" the " vitæ in mari traductio § ;" the

* Θεραπευτικης μεθοδε, Βιβλιον ε.

† CELSUS, Lib. II. cap. 15. Lib. III. cap. 22. GALENUS de Sanitate Tuenda, et variis aliis Locis. ORIBASIUS, Med. Collect. Lib. VI. CÆLIUS AURELIANUS de Phthiſica Paſſione, ALEXAND. TRALLIANUS, Lib. X. H. MERCURIALIS de Arte Gymnaſtica, &c. &c.

‡ CELSUS, Lib. II. cap. 15. Lib. III. cap. 22. Lib. IV. cap. 4. CÆLIUS AUREL. de Phthiſica Paſſione, ORIBASIUS, Lib. VI. c. 23. PLINIUS, Hiſt. Nat. Lib. XXXI. c. 6.

§ ARETÆUS de Curat. Diuturn. Morb. Lib. I. c. 1.

" vita

" vita in mari acta *;" the " vita in mari degi-
" tur †," from whence the benefit ariſes.

The motion of a ſhip produces no other effect than ſickneſs; which, as PLINY ‡ and ORIBASIUS § obſerve, is ſuch as is produced by *Hellebore*. But this effect is generally over in a day or two, and does no other ſervice than what ariſes from agitating the body, and cleanſing the firſt paſſages. Sea-ſickneſs, like any other ſickneſs of the ſtomach, by leſſening the action of the heart and arteries, at firſt diminiſhes hectic heat; but, when it continues long, it produces miſchiefs, which I have already mentioned ||.

It is alſo the effect of very ſuperficial obſervation, to aſſert that ſea air, or ſea-ſide air, is detrimental in pulmonic diſeaſes;—or that ſea air, or ſea-ſide air will invariably cure them;—or not to know that ſea air, and ſea-ſide air, may be very different things,—the latter, often vitiated by ſituation; and by winds, at particular ſeaſons of the year, from conti-

* ARETÆUS de Curat. Diuturn. Morb Lib. II. cap. 3.
† Ibid. de Curat. Phthiſis.
‡ Lib. XXXI. cap. 6.
§ Lib. VI. cap. 23.
|| Vide p. 16.

guity

guity to other countries, and from paſſing over marſhes, and other unwholeſome places:—as at *Hieres*, near *Toulon*, which is, at ſome ſeaſons of the year, a ſituation favourable to weak bodies,—at others, pernicious.

It has ever been the practice of phyſicians who ſtudied nature, to remove their patients to ſituations, oppoſite to thoſe, in which their diſeaſes originated;—from land, to ſea;—from ſea, to land;—from mountains, to valleys;—from valleys, to mountains: and to remedy local diſeaſes, by local contraries.

Change of climate has often cauſed a great revolution in the habit, and has performed miracles in diſeaſes, without any intrinſic ſuperiority in the air of the ſpot reſorted to.

Montpellier, that moſt ſalubrious place, to people from diſtant countries, is not remarkable for the health, or beauty, or longevity of its native inhabitants; and has been often afflicted with violent epidemical diſeaſes. I have obſerved at *Montpellier*, that patients coming there, in pulmonic diſeaſes, generally benefit exceedingly at firſt; and as generally remain ſtationary afterwards. Having aſcertained this fact, I have warned thoſe, whom I have ſent thither,

thither, not to deſpair, if, flattered by a great change for the better at firſt, they ſhould afterwards find their complaints at a ſtand; nor to relinquiſh the hopes of recovering, if the good effects of that climate, after a time, ſhould begin to abate. In ſuch caſes I always adviſe them to quit *Montpellier* for a while, and go to *Avignon*, or to *Aix*, or to *Marſeilles*, and return after a little abſence to *Montpellier*. From ſuch little changes, and moving about (for neither the ſame air, food, nor medicine, continues to agree long with conſumptive people), I have found the moſt ſalutary conſequences * :—eſpecially when the patient has been able to vary his ſituation, according to SYDENHAM's advice, on horſeback †.

In the preceding obſervations, I am aware that I have preſcribed only for the affluent :—and it is with concern I ſee, and have often

* *Peregrinatio*, or travelling, is ſtrongly recommended by CELSUS, Lib. IV. cap. 4. *Zozimus*, PLINY the younger's freed-man, was cured of a ſpitting of blood by long travelling in Egypt, to which place his humane maſter ſent him from Rome.—Epiſt. XIX. Lib. 5.

† ÆTIUS and ORIBASIUS had a different opinion of horſeback exerciſe: the former, Tetr. I. Serm. 3. cap. 7. ſays, "Pectori peſſimum eſt;" and the latter, Med. Collect. Lib. VI. cap. 24. ſays, "Thoraci infenſiſſima eſt."—Horſeback exerciſe is, doubtleſs, improper, while pain, or inflammation, or plethora is preſent.

ſeen, the fate of the indigent, in pulmonary conſumption.—It is a diſeaſe in which there is no remaining upon the ſpot, where it originates; and, unleſs taken in the very beginning, of doubtful cure, under all the advantages I have enumerated.—It is a diſeaſe, neither of vice, nor intemperance; ſometimes of accident: but, in general, from a variance between the organization of a body, and the climate wherein it is placed.—Yet, unleſs there ſhall be ſome extreme defect in the formation of the thorax, nature has not denied a cure; but it is that hard ordinance which proſcribes thoſe their native countries, who never offended her laws:—an ordinance that has no conſideration for the poor.—*Cælum fugere, quod fecit malum.*

Diſeaſes of climate muſt ever remain; but there is no climate in which ſome diſeaſes are not acquired that might be avoided: and there is no climate in which ſo much care and circumſpection are required to ſecure the body from diſeaſes, and where they are ſo violent and rapid, as that which is the ſubject of the preſent conſideration.

The ridiculous notion that people are to die of putrid diſeaſes in hot climates, unleſs they keep up their ſpirits, and embalm their bodies, by

by the aſſiſtance of an additional quantity of wine, ſtrong liquors, and living well, as it is vulgarly called, has cauſed the death of thouſands.

Another almoſt equally pernicious practice, from the ſame notion of putrefaction, among new-comers, is, to devour great quantities of fruit, and to drench themſelves with acid drinks; but if they eſcape a flux, they deſtroy the tone of the ſtomach, and are ſoon left without either appetite or digeſtion.

Some people heat themſelves by too much exertion, or by violent exerciſe in the ſun: and, when heated, expoſe themſelves to get haſtily cooled. Others expoſe themſelves to rain; or walk in wet graſs; or ſit long in the night air: theſe are cauſes of great miſchief.

Feſtivity, the reſource of men, and dancing, the reſource of women, are cuſtoms much practiſed in the Weſt-Indies: and hoſpitality, which there knows no bounds, ſometimes makes her kind offices and amuſements dangerous to her friends. New-comers have no buſineſs at feaſts, or at balls.

There is, in the inhabitants of hot climates, unleſs preſent ſickneſs has an abſolute controul over

over the body, a promptitude and bias to pleaſure, and an alienation from ſerious thought and deep reflection. The brilliancy of the ſkies, and the levity of the atmoſphere, conſpire to influence the nerves againſt philoſophy and her frigid tenets, and forbid their practice among the children of the ſun.

The means of preventing diſeaſes in hot climates, are founded on the ſame principles as the means of preventing them in every other climate are. The theme has been much worn by divines, philoſophers, and phyſicians.

If *Temperance* had not ſo many powerful adverſaries to contend with, in the numerous relatives to ſenſuality, every perſon would be healthy. The young would be ſo from preſent, and the old from paſt, obſervance. But there ſeems to be ſuch a variety of claims in the body, each nerve contending for its portion of pleaſure, that reaſon is often loſt in the conflict, and driven from her throne by the anarchy of paſſions.

By keeping the body quiet, and cool within, as well as without, the firſt object of ſeaſoning in hot climates will be attained; which is, to moderate the action of the ſolids, and to diminiſh

niſh the volume and denſity of the fluids. Thus the ſerum of the blood is neither heated, nor rendered acrid; leſs thirſt is excited, and alſo leſs perſpiration: by which means both the riſque and the danger of checking perſpiration ſuddenly are obviated.

Living in an houſe with lofty and ſpacious rooms, in a dry ſituation; keeping within doors as much as poſſible during the middle of the day; never travelling on a full ſtomach, or when heated with wine; avoiding the night air in general, but in particular after travelling much, or having been much expoſed, on the ſame day in the heat of the ſun; never ſitting down, or remaining in a current of air, with wet linen on, or when much heated; nor ſuffering the body to cool ſuddenly, by unbuttoning or throwing off the coat, or any other part of the dreſs; never going out when it rains, and if by accident overtaken in it, to get as ſoon as poſſible to bed, and remain there an hour or two, firſt putting the feet in warm water, and drinking a baſin or two of warm tea; purſuing ſome amuſement in vacant hours from buſineſs, that is not fatiguing, and that does not agitate the mind; going to bed, and riſing, at early hours; taking much reſt, for that is neceſſary; ſleeping as coolly as poſſible, but never upon a ground floor if it can be avoided; uſing gentle ex-

exercise early in the morning; drinking but little wine, and that Claret or Madeira, but no spirituous liquors, nor punch, for acids are, in the end, destruction to the stomach; eating light food of easy digestion, roasted in preference to boiled, and of whatever sort best agrees with the stomach (for those countries have a great variety of luxuries, as well as necessaries of life); using but little butter; vegetables well boiled; fruit sparingly; tea or coffee for breakfast; avoiding suppers; with now and then taking a dose of salts, and making that day, a day of abstinence,—are the best cautions, and precepts for health, that I can give.

I dare not recommend cold bathing; it is death with intemperance, and dangerous where there is any fault in the viscera. It is a luxury denied to almost all except the sober and abstemious females; who well know the delight and advantage of it. Indiscriminate bathing has been fatal to several men whom I remember, that used it, to add pungency to the appetite of voluptuousness. People must be temperate in their way of living, and free from obstructions in the viscera, who bathe. Therefore, I believe it will not accord with either the habits, or situations of many.

When I recommend drinking nothing but *water* in hot climates, as the moſt certain inſurance of health, I expect to have but few diſciples to embrace my doctrine, eſpecially among thoſe that have moſt need of it;—who are, ſuch as have broken down their conſtitutions by intemperance at home. Nor will it receive much ſupport from the crude and indigeſted notions of thoſe, who think, "that the "moſt abſtemious and temperate perſons often "die ſoon, in unhealthy countries, as well as the "irregular and debauched *." But I aver from my own knowledge, and cuſtom for ſeveral years, as well as from the cuſtom and obſervations of many other people, that thoſe who drink nothing but water, or make it their principal drink, are but little affected by the climate; and can undergo the greateſt fatigue without inconvenience. There are habits of body to which water-drinking may be objectionable; but that can ſcarcely ever happen among young people, and thoſe of a plethoric, or of an inflammatory tendency.

Whatever mode of living may be proper after people have lived long in hot climates,

* LIND's Eſſay on Diſeaſes incidental to Europeans in Hot Climates, p. 8 edit. 3.

and

and when, perhaps, by having been frequently diſeaſed, the inflammatory diatheſis of the body is paſt, while it remains (as it will with ſome people for many years), thoſe who uſe water for their common drink, will never be ſubject to troubleſome, nor dangerous diſeaſes. The greateſt inconvenience I know, attending water-drinkers is, that their appetite is generally ſo keen, that they often eat more than they ought.—An occaſional oppreſſion at the ſtomach thus created, is beſt relieved by three grains of *Aloes*, or a few grains of *Rufus*'s pill, where thoſe medicines are not exceptionable, made into a pill, and taken at bed-time.

The gratefulneſs of cool liquors in hot climates, is among the firſt ſenſations of luxury. A glaſs of water, or wine, that has been much cooled, produces a very different effect on the ſtomach, as well as on the palate, to what either does in an equal ſtate of heat with the atmoſphere. A late diſcovery for generating ice, from an artificial frigorific compoſition, will be of great benefit in tropical countries: as there is no place ſo ſituated, where this compoſition will not afford as much inſtantaneous refrigeration as can be required, either for the purpoſe of medicine, or for the luxury of the table.—The preparation is as follows.

Take Oil of Vitriol, and Water, of each an equal weight; or by meaſure 1 and 4-5ths of Water, to 1 of Oil of Vitriol. Mix theſe together, by adding the Oil by degrees. Let this mixture, which will be very hot, ſtand until it is cold; and after it has been ſo for ſeveral hours, or longer,—take fourteen ounces of it, and diſſolve in it ſixteen ounces of Glauber's ſalt powdered:—add the ſalt by degrees, and ſtir it, until it is diſſolved. This quantity will ſerve to cool one bottle of any liquor, at a time, and the ſame proportion is to be obſerved for any other purpoſe. The ſalt muſt be kept from the air, before, as well after, it is powdered, that is intended for this ſolution:—for when it has acquired that white appearance which Glauber's ſalt will do by long keeping, and by being expoſed to the air, it is unfit for this proceſs. The ſolution of the ſalt ſhould be made in a thin glaſs jar, and whatever is intended to be cooled by it, is to be put into it, in another thin veſſel. It may be made in an earthen or wooden veſſel, but the thickneſs of theſe veſſels diminiſhes the coldneſs of the ſolution. This ſolution, made in the moſt accurate manner, has ſunk the thermometer from 62° to 10°, a reduction of 52 degrees. When much refrigeration, or congelation, is required, it is neceſſary to make two or more

ſolutions,

ſolutions, and put one in a very thin tin, or glaſs veſſel, into another. But in a common way of making it, and in almoſt any veſſel, it will reduce the thermometer forty degrees, and will be ſome hours before it returns to the heat of the atmoſphere, when the coldneſs is not taken often, by the refrigeration of bodies, immerſed in it. But the greateſt degree of coldneſs is at the firſt inſtant the ſalt is diſſolved.

Though there is abundance of excellent water in moſt of the Weſt-Indian iſlands, particularly in Jamaica, in which there are alſo ſprings of powerfully hot ſulphureous, and cold chalybeate waters; yet for the common purpoſes of life, it is an article of too much conſequence to health, not to merit the greateſt attention in the choice of it, in reſpect to its pureneſs from any vegetable, metallic, or ſaline property; and its tranſparency and levity, from not being loaded with terrene matter.

Mineral and brackiſh waters may eaſily be diſtinguiſhed by the taſte: and water that is ſo ſituated as to receive the leaves of trees, and vegetables, unleſs it be in a very rapid ſtream, ſhould never be uſed.

Individuals are not ſo likely to be diſtreſſed, as navies and armies; to which great miſery has often ariſen on this account.

Voyages and expeditions, in different parts of the world, are full of recitals of this ſort.

The Engliſh troops, during the ſiege of the Havannah, in 1762, ſuffered greatly from bad water. The people, during the ſiege of ORMUS, in 1622, according to MONOXE's Journal, were terribly afflicted with the bloody flux, from drinking brackiſh water. The Earl of *Cumberland* loſt ſix hundred men out of the thouſand which he landed at *Puerto Rico*, in 1597, by the ſame diſeaſe; and principally, it is ſaid, from the ſame cauſe: between the 6th of June, when they landed, and the 14th of Auguſt, when the ſurvivors departed from the iſland. *Port Louis*, in the Iſle of France, has been ſeveral times nearly depopulated by the bloody flux, before the great river water was brought down there; and in all the colonies, both in the Eaſt and Weſt-Indies, there are towns which ſuffer great inconvenience from their founders not having duly conſidered the importance of good water, before they began to fix their habitations.

The

The Engliſh drink more wine and ſpirits than the French; the French more than the Spaniards; and we calculate the mortality of each, by this rule. The Spaniards live to great ages in the plains of *St. Jacques*, *Cotuy*, and *Beque*, in St. Domingo; partly from the ſalubrity of the air, but chiefly from their ſobriety.

Our troops in the Weſt-Indies are killed by drinking new raw rum; and ſo are the lower order of mechanics, and white people on the plantations.

The conſequence of drinking rum and water, or *Grog*, as it is called, is, that habit increaſes the deſire of more ſpirit, and decreaſes its effects; and there are very few grog-drinkers who long ſurvive the practice of debauching with it, without acquiring the odious nuiſance of dram drinkers ſtercoraceous breath, and downright ſtupidity and impotence.

Rum and water is an wholeſome beverage; and when taken in moderation, and made very weak of rum, it is perhaps, for laborious people, the beſt liquor to quench their thirſt with: for rum is a great corrector of water, and promoter of perſpiration. But the exceſs of the proportion of the rum to the water ſhould be guarded

guarded againſt, by thoſe who intend to preſerve their health, with the utmoſt watchfulneſs. A man who is determined, either by choice or neceſſity, to drink rum and water, ſhould keep a jealous eye on his meaſure; that once violated, his palate becomes vitiated: and if reaſon be not exerted to prevent, it will ſeldom be found equal to the taſk of correcting an habit, eſtabliſhed on the ruins of fortitude.

Soldiers collect their rations of rum, or ſell their proviſions to buy it, until they have got a ſufficient quantity to debauch with. If they drank in a regular manner, and well diluted with water, the quantity of rum allowed them, and no more, and that of good quality, it would do them no injury: but this is not the caſe, nor ever can be in the Weſt-Indies, while they are quartered in towns.

If the native white inhabitants of the iſlands were not inclined to temperance, which they are in an eminent degree, the drunkenneſs of the ſlaves, with its cadaverous effects in their aſpects, and the ſhocking pollution of their manners, would render the vice of intoxication ſo odious, that pride would revolt at a practice ſo debaſing to body and mind. Here are examples that would have deterred the Spartan

Spartan youth, without any trouble to their parents.

The Creole women ſeldom drink any thing but water. This they carry to exceſs; and many of them require wine, which from the want of habit they cannot drink. They live, in general, as long as the inhabitants of Europe; and though they are ſubject to nervous complaints, they are ſeldom ſubject to ſuch as are dangerous: and to inflammatory diſeaſes, partial ones excepted, ſcarcely ever.

They injure their nerves by not taking ſufficient exerciſe, and by uſing too great a quantity of acids, ſalted meats, vegetables, and fruits; and this crude diet makes the neceſſity for the pernicious and cuſtomary large addition of peppers.

Acids, in every climate, create coſtiveneſs, endanger the ſweetneſs of the breath, and are fatal to the organs of digeſtion. It is to this cauſe, principally, that I attribute the inſuperable ſourneſs in the ſtomach, the coldneſs of the ſkin, and partly the pallidneſs of the complexion, of the inhabitants of hot climates.

The natives of the French iſlands drink ſuch quantities of lemonade, with their cold acid,

vegetable diet, that they ſometimes are ſuddenly ſeized with a total loſs of appetite and digeſtion, which is followed by an imbecillity of the whole body, from which they never recover.

HILLARY ſays, "the common ſweat, even "of perſons who are well, when taſted in the "Weſt-Indies, is ſo very ſalt and acrid, that "it taſtes like the ſalt or ſpirit of hartſhorn "mixed with water*." I cannot ſay I have often found this remark verified; but, generally, on the contrary, from the climate being unfavourable to animalization, the ſweat has a nearer affinity to the ſpirit of vinegar. All the fluid excretions, in habits not bilious, are impregnated with an acid acrimony; and the ſweat is ſo powerfully ſo, generally, that the rooms of ſick people ſmell like the ſteam of acid preparations: and I have always obſerved, that the uſe of aromatic ſcents, and the burning of fragrant woods and herbs, were more refreſhing to the patient, and cleanſing to his chamber, than the ſprinkling of vinegar, and the uſe of acids.

The idea that every thing in hot climates inclines to putrefaction, by the alkaleſcent diſpoſition of the animal juices, while life re-

* Introduction, p. 6.

mains,

mains, appears to me to be totally void of foundation. If bile be prone to alkalescence, milk, lymph, and chyle, are prone to acidity,—and all habits are not bilious. It is certain, that putrid fermentation is soon excited after death; but there are no pestilential, nor contagious fevers, at least in the islands: either because the air is impregnated with a subtile acidity drawn from the sea in these islands, which accounts for many phænomena attributed to moisture only *, or that it is so rarefied as to prevent that aggregation and condensation of miasma, by which it cannot acquire quantity, or force, sufficient to inflict diseases, and is divided, broken, and dispersed through the air, in impotent solution.—Besides, the atmosphere, by regular winds, is in constant agitation, and there are no calms of sufficient duration to make any malignant exhalation stationary.

* Siccissima in his locis (Java) anni tempestate ferrum, chalybs, æs, argentum denique, citius rubiginem et æruginem contrahunt, quam in Europa pluvioso ac autumnali anni tempore. BONTIUS, *Dial. Primus.*

Aër in America adeo efficax rodendo, ut metalla fere omnia consumat, ut de aëre Bermudensi Britanni testantur.

BOERHAAV. *Chem. Tom. I. de Aëre.*

Much

Much has been ſaid by writers concerning malignant and putrid fevers, and the tendency of all fevers to putrefaction, in hot climates. But ſuch opinions are not founded on practice, however they may ſeem to agree with theory. The great endemic there, is the *Nervous Remittent Fever*, which is unattended with any putrid ſymptoms, and which has its ſeat in the nervous ſyſtem; or, as I have often thought, in the brain itſelf. I ſcarcely remember to have ſeen a fever accompanied with petechial, or purple ſpots, in the Weſt-Indies, where the circulation had not been forced with cordials and hot regimen; and it is very uncommon to find the parts livid, or gangrenous, where bliſters have been applied, unleſs when the patient has not been properly evacuated in the beginning of his diſeaſe: or in ſome groſs habit, where the ſolids and fluids were previouſly in a ſtate of diſeaſe and corruption.

Perhaps, the poſition, that ſizy blood, and inflammatory diſeaſes, occur oftener than otherwiſe, in hot climates, is nearer the truth; and are the general produce of all, excepting autumnal months: in which intermittents reign, and debility characteriſes diſeaſes.

In

In the vicinity of *Kingſton* in Jamaica, in the months of January, February, and March, in the year 1779, there was not one ſhower of rain; and the ſea-breezes were violent. The diſeaſe prevalent, was rheumatiſm. Of the many hundreds whom I bled, during thoſe three months, and the following one, there was not one perſon of either ſex, or of any colour, whoſe blood was not ſizy.

In all hot climates, females arrive at maturity earlier, and they alſo ſooner decay, than in cold climates. In youth, obſtruction of the menſes is more frequent, and greater inconveniences follow their temporary ſuppreſſion here than in other climates; but leſs inconveniency attends the final ceſſation of menſtruation. The ceſſation of this diſcharge, though at the advanced and natural time of life, in every climate, cauſes a revolution in the habit that is attended with danger, and conſtitutes the moſt critical period of a woman's life. Bleeding, in a ſmall quantity, a few days before the accuſtomed time of the return of this evacuation, for many months, after the firſt ceſſation, is the only general remedy, for indiſpoſitions occaſioned by it, which can be adviſed.

Though

Though females do arrive at early maturity in hot climates, there are none of thoſe wonderful inſtances of early pregnancy in the Weſt-Indies, that travellers ſpeak of, and ſuch as are ſaid to have happened in other parts of the world.

SAVONAROLA ſays, he ſaw a girl pregnant at nine years of age; JACQUES DE FORLI, one of eight years old; and DESPARS, in his comment on AVICENNA, that he ſaw a girl at *Tournay*, who at the age of nine years had already a child: many other tales of this ſort are collected by the marvellous SCHENCKIUS.

After ſuch extraordinary events, it cannot appear improbable, that a young lady, as I was informed, at *Aix*, in the ſouth of France, in 1786, was then pregnant in the twelfth year of her age.

Such inſtances as even this, though uncommon in the Weſtern world, and among the ancient Lacedemonians, were not uncommon among the Athenians, Thebans, and Romans. Policy, which has converted the early exerciſe of the natural paſſions to advantage in ſome ſtates, has made it diſgraceful in others.

Hiſtory

Hiſtory furniſhes ſome inſtances of remarkable fœcundity in extreme age, that are never to be met with in the Weſt-Indies. PLINY ſays, that *Cornelia*, of the family of the *Scipios*, brought forth a child in her ſixty-ſecond year, which child was afterwards the conſul *Voluſius Saturnius:* and that among the common people, even the age of eighty-five afforded ſuch prolific examples *.

However, though ſuch things are neither within my knowledge nor belief, the father DUTERTRE ſays, a ſavage Carribbean woman, of eighty years of age, had a child at *Guadaloupe:* and he mentions an inſtance of another, who was ſuppoſed to be upwards of an hundred years old, that became pregnant, "par "un jeune garçon François †."

Hot climates are indeed very favourable to geſtation and parturition. Difficult labours are not common; and children are generally born healthy and ſtrong; and thrive more than they do in temperate climates, for a few years, and are not ſubject to the rickets, nor the ſcrophula:

* Lib. VII. cap. 14.

† Tom. II. p. 380.

after which they generally get into a flaccidity of muſcle, and acquire a paleneſs that characteriſes their future complexion.

Women ſoon recover from lying-in; and Indians and negroes often make it an affair of a few days, and ſometimes of a few hours only, and then purſue their occupation.

If climate had not a conſiderable ſhare in the ſucceſs of the event, a remarkable occurrence happened within my knowledge, in which ignorance and reſolution reduced an operation, ſuppoſed of great difficulty and danger, to a ſuppoſition that there is neither difficulty nor danger attending it: at leaſt when judiciouſly performed.

In the year 1769, a *negro woman* (belonging to Mrs. *Bland*, a midwife), at Mr. *Campbell's* graſs plantation at the *Ferry*, between *Kingston* and *Spaniſh Town*, in Jamaica, being in labour, ſhe performed the *Cæſarean operation* on herſelf, and took her child out of the left ſide of her abdomen, by cutting boldly through into the uterus.

She performed this operation with a butcher's broken knife, about two inches and an half

half long,—the part which joined to the handle. The poſition of the child was natural; ſhe cut through near the *linea alba*, on her left ſide, and cut into the child's right thigh, which preſented at the part, about three lines deep, and two inches and an half long. The child came out by the actions of his own ſtruggling. A negro midwife was ſent for to her, who cut the navel cord, and freed the child, and returned the part of the navel cord adhering to the placenta, and a conſiderable portion of the inteſtines alſo, into the abdomen, which had come out at the wound with the child.

The ſurgeon who attended the plantation was ſent for, a few hours after the accident happened; and judging, from the ſituation in which he found her, that ſome dirt had been put into the wound, by the old midwife, with the inteſtines, he cut open the ſtitches that had been made, and carefully waſhed the parts clean, extracted the placenta at the wound, and then ſtitched it up again.

On the third day after ſhe had recovered from her ſunk ſtate from the loſs of blood, which was conſiderable, a fever came on, which was removed by cooling medicines: ſhe then took bark for ten days. The wound was

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fomented and dreſſed properly, and was ſoon cured; and the woman was well in ſix weeks time from the accident, and able to go to her work.

The child died on the ſixth day, with the *Jaw-falling*, as it is called; but came into the world healthy and ſtrong.

The woman continued perfectly well, menſtruated regularly, and was with child again a year or two afterwards.—She attempted the ſame operation again, but was watched and prevented, and had a regular and proper labour. She had borne three children before this affair, all with natural and eaſy births. She was an impatient and turbulent woman, whoſe violence of temper was the only cauſe aſſigned for her conduct *.

It is not uncommon, neither in the Weſt-Indies nor in Africa, to ſee white children, or white negroes, as they are called, from black parents. Mrs. JONES, in Spaniſh Town, in Jamaica, had a boy, whoſe father and mother were black, that was perfectly white, with white woolly hair, and grey eyes; but with

* I wrote what relates to the accident, at the time it happened.—It has already been publiſhed.

lips,

lips, noſe, and ſhape, intirely African. The white colour of the ſkin of people of this ſort is not like the ſkin of European white people; but much whiter, and without that redneſs diſtinguiſhable in the ſkin of Europeans. They are generally nyctalopian, and ſhort-lived.—Another caprice of nature ſometimes produces piebald children from negro women. The Reverend Mr. *Penlington*, in Jamaica, had a black woman who brought forth a party-coloured black and white child.

PLINY's ſtory of the *Proconneſian* ſlave, who having had carnal knowledge of her maſter, and his ſteward, on the ſame day, and became pregnant by both of them, and brought forth two children reſembling their reſpective fathers; nor the ſtory of the adultereſs, mentioned by ARISTOTLE, are neither of them ſo curious nor ſo deciſive an inſtance of Επικυησις, or ſuperfœtation, as one that happened at *Shortwood* eſtate, in Liguanea in Jamaica, ſome years ago. A negro woman brought forth two children at a birth, both of equal ſize, one of which was a negro, and the other a mulatto. On being interrogated upon the occaſion of their diſſimilitude, ſhe ſaid, ſhe perfectly well knew the cauſe of it; which was, that a white man, belonging to the eſtate,

came into her hut one morning before ſhe was up, and ſhe ſuffered his embraces almoſt inſtantly after her black huſband had quitted her.

In the anatomical theatre at Leyden, when I was at that Univerſity, there were two ſkeletons preſerved, ſaid to be the bones of twins differing remarkably in colour, which a burgo-maſter's wife brought into the world, in the time of ALBINUS. What cauſe produced their diſſimilitude was not known.

European animals in general degenerate in the Weſt-Indies; and, as they deſcend in a few generations, retain but little reſemblance of their original ſtock. How far this extends to the human race, as relative to natural endowments, is a ſubject of nice inquiry, and foreign to my preſent purſuit. However, if any inferiority be found at all, it does not appear in the firſt generation, or in thoſe born immediately of European parents. But on the contrary, if my obſervation be juſt, in people of this deſcription, there is equal capacity and ſtability of mind, with more acumen than in thoſe born in Europe. Whether this diminiſhes or not, in further removes, without European mixture, abſtracted from the influ-

ence

ence of habit and education, may admit of ſpeculation. But let the change be how, or what it may, I have never obſerved any declenſion in the qualities of the heart, nor in the tendency of the mind, that philoſophy could fairly attribute to nature. The women are generous, affectionate, induſtrious, and virtuous. The men are brave, polite, and ingenious, and have a peculiar turn for the acquirement of belles lettres, and the elements of arts, that are not laborious.

Powerful as the dominion of paſſion and impatience is, indolence muſt prevail, where perpetual ſameneſs of the ſeaſons blunts the edge of energy, and where climate relaxes the muſcular fibres, and debilitates the nerves. European dogs loſe their ſcent, horſes their ſpeed, and human beings, of delicate ſtructure and fine feelings, ſink into a weariſome exiſtence, deprived of power and inclination to move. But there are different caſts of human beings, as well as of other animals. Men generated from the coarſer materials of northern melancholic matter, who on their native ſoil were intended to vegetate, labour, and die, often acquire an expanſion of ſoul, removed to warmer climes. They ripen in the ſun.—They get ideas in ſpite of nature. It is not

uncommon between the tropics, to ſee contention for precedency, duel from punctilio, and the laws of honour obſtinately inſiſted on, by men, who, but a few years before, were imported from Europe to fulfil ſome ſervile office, in which they acted with ignorance and integrity, until the ſun had ſublimed their ſtupidity and diſſolved their principles.

The reverſe of what is ſuppoſed to happen to the European, tranſlated to the Weſt-Indies, attends the African race. Every generation here, is an improvement on the former. That wild chaos of inſtinctive notions, which negroes bring from Africa, ſeldom can be modulated, unleſs they come from it very young, to bear any durable, rational impreſſion. When this happens, they look back with horror on their ſavage ſtate; and do not eaſily forgive, unleſs ſome compliment be added on their improvements, the reproach of having been born in Africa, and of ever having lived in a ſtate that nature intended for them.

The objects which natives of the ſable world embrace are few,—but ſtrong: and flouriſh on the brain undiſtracted by contending mental emanations.

A ne-

A negro,—*Parthis mendacior*,—deliberates; and never makes a ſpontaneous reply. When a queſtion is aſked, he generally deſires to have it repeated, pretending not to underſtand it, that he may have time to prepare an anſwer. A lie once determined on, no pain nor puniſhment can ſhake him.

Detected in committing a theft, he is not diſconcerted; and, when any thing which he has ſtolen is found on him, he denies all knowledge of the fact, and inſiſts, that it was the devil that did it, who, to do him an evil turn, had put the article ſo ſtolen into his mouth, or hand, or pocket, or wherever it is found.

Their cunning is often accompanied with great preſence of mind. A runaway has been purſued, and, not able to eſcape in open day, has jumped into a river, where he ſat up to his neck in water, with his head covered with the boughs of a tree which he gathered for that purpoſe; and thus evaded his purſuers, who paſſed cloſe by him, without diſcovering him.

Louis the XIVth and his court were put into a ridiculous predicament, by a trick that was prac-

practiſed on them, by a negro who had been kidnapped on the coaſt of Africa, and carried to the Weſt-Indies. The man pretended he was the ſon and heir-apparent to the king of *Aſſinee* in Africa. He was ſent to France from the Weſt-Indies, and preſented to the court, where he kept up the artifice with unſuſpected ingenuity. The court was highly flattered with the opportunity of converting a pagan prince to chriſtianity; or, as it was ſaid, with the hopes of getting a footing, and eſtabliſhing a factory, in his country. He was a long time inſtructed in the chriſtian principles, and baptized by the biſhop of *Meaux*, the king himſelf being his godfather; and he received the ſacrament of the Lord's Supper from the cardinal *de Noailles*, and offered at the ſame time a picture to the bleſſed virgin, to whoſe protection he ſubmitted his territories, having made a vow, at his return thither, to uſe his utmoſt endeavours towards the converſion of his ſubjects. The impoſtor departed, and was conveyed home by three men of war, under the command of the chevalier *Damon*. When this hopeful prince arrived in Africa, he threw off, with his diſguiſe, his fine French clothes, confeſſed that he was a ſlave, ſtripped himſelf naked, laughed at the French and chriſtianity,

chriſtianity, and returned to his black maſter and paganiſm *.

The ſame court alſo, in the year 1698, experienced a great mortification from another royal youth, the king of *Juda's* ſon, prince *Aniaba*, whom the African company had brought from Africa, and preſented to the court. The king had him entered in the college at the academy, and educated with vaſt expence and magnificence. After ſome years, when it was thought he had ſufficiently acquired the principles of religion and civilization, the king made him a captain of cavalry, permitted him to ſerve in his army, and honoured him in the moſt ſingular manner; and being deſirous, before he returned to his own country, that he ſhould ſignalize the piety in which he had been inſtructed for ſo many years, the order of the ſtar was inſtituted on this occaſion, in honour of the virgin; and a large picture repreſenting the event was placed in Nôtre Dame at Paris, as a monument of his faith and devotion. After this ceremony, he was ſent back to Africa in the greateſt pomp. On his arrival, all his decorum vaniſhed at the ſight of the congenial barbariſm of his country; he immediately ſtrip-

* European Mercury for the Year 1701.

ped

ped off his clothes, abandoned himself to the most savage practices, and immerged into every species of impiety and profligacy: and, in return for the kindness he had received in France, he endeavoured to excite an insurrection, and extirpate his benefactors *.

The French missionaries in the West-Indies formerly found it impossible to impress any African negro with the least notion of christianity, who exceeded the age of ten or twelve years; and they desisted, after innumerable fruitless attempts, to baptize any who were brought from Africa above that age. The old negroes would be baptized, over and over again, concealing that they had ever been baptized before, to get the presents which those pious fathers bestowed on them, at the time of this introduction to religion. No interpretation could enable them to comprehend the ceremony. All explanation confounded. Making a sacred compact was above the capacity of their minds, fettered with the superstitious chains of spells, sorcery, and incantations. Excepting their own dealers in poisons and witchcraft, they knew but of two agents that could possibly have any concern in their affairs:—one sent them a good, the other a bad crop of corn.

* Pere Labat, Vol. II. p. 43.

Though

Though religion has not been able to make any impreſſion on aged Africans, the young have frequently embraced it with ſincerity. The Portugueze, from their firſt ſettling on the coaſt of Africa, have perſevered in the attempt, and by great labour and zeal have eſtabliſhed ſome veſtiges of chriſtianity on the borders of *Congo* and *Angola*.

Mahometiſm has been ſpread by the Moors over conſiderable diſtricts among the negroes, in the northern parts of Guinea. I have ſeen many negroes in the colonies, that were obſervant muſſelmen. One of whom, a native of *Mundingo*, I knew to be a pious man, well acquainted with every article in the koran, and the Arabic language.

Negroes born in the Weſt-Indies, particularly thoſe who are brought up about the habitations of white people, are capable of religious inſtruction, I am convinced, if they were carefully trained in it from their infancy; whatever might be the ſucceſs of any attempt among thoſe great maſſes, who live in mountains and on plantations, and have little or no intercourſe with white people. It is well known

that baptiſm always removes the greateſt dread negroes have ;---which is, the dread of one another. The colonies of catholic ſtates have availed themſelves of this ; and their creole ſlaves, therefore, are ſuperior in character, and more orderly, and tractable, than thoſe living under proteſtant governments : where, excepting ſome laudable, but feeble efforts made on the plantations of *Moravians*, there is no religion at all.

It is unneceſſary to deſcant elaborately on propagating religion as a duty, or on the political advantages that would reſult from it, reſpecting colonial reformation.—It is the baſis of civilization, and antecedent to morality. Society muſt begin with it ; and inſtruction follow.—And though uſurpation over ignorance be diſgraceful to an enlightened world,—yet barbarous and uncultured nature can no more enjoy, than defend the rights of man.—Were the mighty plains of Africa the reſidence of philoſophy, her children would not wear the chains of European ſlavery.

Without bloodſhed, perſecution, or oppreſſion, what bleſſings have been produced by inſtruction, founded on religion, in *Paraguay!*

A few

A few Jeſuits there, through the medium of religion, converted many nations of wild, lazy, and ferocious Indians, to an orderly, induſtrious, and peaceful life. They took theſe creatures, depraved and ſavage, as nature turned them out on the earth, raiſed their condition, and gave them the enjoyment of humanity.

Theſe fathers, unlike thoſe fathers who for their intemperate zeal have been puniſhed with martyrdom, began properly; not by diſturbing what was not, but by improving what was, capable of amendment; not by ſcattering about the flames of novelty, and practiſing on the paſſions, but by wiſely applying the rationality inherent in man to its proper end: making virtue beneficial, and vice detrimental to his happineſs. Having no means to enforce obedience, they gave the Indians ideas before they gave them their doctrines; and united, with their religious, civil laws, that produced perceptible advantages, before the laws themſelves were comprehended. The effect was an atchievement, which the annals of mankind cannot parallel. In policy, it ſinks the fame of SOLON and LYCURGUS: and if Spain, thinking it dangerous to her intereſt to have the Indians

dians enlightened and happy, had not interfered, these Jesuits would have carried the utility of christianity to an height, transcending all example in the records of religion.

In tropical countries, people are seldom afflicted with dangerous *pulmonic* diseases; *Idiotism* and *Mania* are very uncommon: and though the moon has unquestionably great influence on crises, and relapses, in continued and intermittent fevers, yet *Lunacy* is almost unknown.* *Scurvy*, and *Gravel*, are diseases seldom to be met with; and the *Stone* scarcely ever.

I have known many Europeans, subject to the gravel at home, who had no symptoms of it during their residence in the West-Indies.

An amiable and worthy officer, of the 79th regiment, had been so afflicted by a stone in his bladder for many years, that he was at length obliged to remain in England, with the intention of having it extracted. Mr. Pott

* In the spring of the year 1777, I remarked that most of the patients whom I attended, in fevers, were much affected in the head at every new and full moon. I have observed the same thing often, but never so uniformly as in that year.

deter-

determined his diſeaſe to be the ſtone, on examination; the ſound of the inſtrument was heard by ſeveral people, who were preſent. His regiment being at Jamaica during the war, ill as he was, he ſpiritedly reſolved to join it, as great mortality had happened among the officers. Soon after his arrival at Jamaica, which was in 1780, all the ſymptoms of his former painful diſeaſe abated. He remained in Jamaica three years, and had no violent return of them; but, on the contrary, they gradually diminiſhed, until it became doubtful whether there were a ſtone in the bladder or not. He has ſince been in *Canada* for two years, and had none of his complaint there; he is now, 1787, in England, and is entirely free from it.

When all precaution to guard againſt ſickneſs has failed, and prudence proved abortive to new-comers, they will have this comfort at leaſt, for their pains, that their diſorders will ſeldom be ſevere, or expenſive, and will generally have a ſpeedy termination; and that their *Seaſoning*, as it is emphatically called, will be removed by bleeding, a doſe of ſalts, reſt, and a cooling regimen.

Where this mild compoſition for future health has not been merited, and no terms

have been made with the climate, violent diſeaſes may be expected; among which, the DYSENTERY, particularly with ſoldiers and ſailors, or an INFLAMMATORY FEVER, perhaps to that degree which has the appellation of the YELLOW FEVER, may be looked for.

Theſe diſeaſes, if we except the TETANUS, are the moſt formidable, and have been treated with the leaſt ſucceſs, of any in the torrid zone. Their rapidity demands the moſt deciſive promptitude—The ſhortneſs of their duration affords no time for experiment.—An error once committed can never be remedied.*

The unequivocal ſymptoms of the dyſentery, demonſtrate that diſeaſe to every capacity; but it frequently happens among tranſient medical viſitors, that the cholera, the bilious remittent, and the bilious putrid fever, are miſtaken for the yellow fever. It as frequently happens alſo, that the bilious colic, and the colic and conſtipation of the bowels, brought on by the injudicious and exceſſive uſe of bark, are miſtaken for the *Belly-Ache*.

* It is pertinently ſaid, in the Weſt-Indies, among the French, "un homme n'eſt pas plutôt tombé malade, qu'il "voit à ſes côtés *le médecin, le notaire, & le confeſſeur*, tous "trois preſque au même inſtant."

Nor

Nor can ſuch fatal errors be conſidered as extraordinary, when the only knowledge Europeans can have of theſe diſeaſes, muſt be from books; and there are no accounts that have been given of them but what are imperfect, and contradictory. Some, by thoſe who never were in the Weſt-Indies; and others, by people whoſe reſidence and practice there, were too limited to afford ſufficient experience, by which they might learn to know the genuine pathognomonic ſymptoms, which diſtinguiſh one diſeaſe from another, where diſeaſes have any ſimilitude.

Worthy of imitation as the laudable efforts of TOWNE, and reſpectable as HILLARY'S* accuracy in deſcribing what he had actually ſeen, were, much improvement in the treatment of diſeaſes has ſince their time taken place in that part of the world; therefore, and conſidering the ſtate in which they found phyſic in the Weſt-Indies, we muſt look back with candour on their practice where we find it defective: for they have done a great deal, deſerved

* TOWNE practiſed phyſic in *Barbadoes* ſeven years; and publiſhed his treatiſe on the diſeaſes of that iſland in 1726. HILLARY practiſed in the ſame iſland, many years longer, after him, and publiſhed his obſervations in 1759.

well in their profeſſion, and great praiſes are certainly due to them. For among the adventurers in phyſic, in the Weſt-Indies, ſince their firſt ſettlement, the principal object ſeems to have been the acquirement of wealth; and TOWNE and HILLARY, almoſt alone, have left behind legacies, collected with great labour and patience, which conſummate the character of friends to their country.

Non nobis, ſed reipublicæ nati ſumus.

Perhaps this conſideration has prevented many from venturing, where TOWNE and HILLARY have gone before, and muſt appear in evidence againſt them. But this is a timid error; for practice every day improves our art. There is no more reaſon why all progreſs ſhould ſtop with TOWNE and HILLARY, than that it ſhould have ceaſed with HIPPOCRATES.

However, this conſideration ought to have deterred ſome perſons, who, with no other pretenſion than the modeſt plea of confining themſelves to things only that fell under their own obſervations, to juſtify their preſumption; and others, who from barely looking at the iſlands during the war, or from only a year or two's obſcure reſidence in confined local practice, could not have learned to take care of them-

themſelves, from giving their opinions to the public on diſeaſes that exiſted only in their own imagination, and on others that they could ſcarcely have ſeen: or at leaſt, by wanting opportunities of comparing a variety of caſes, and the occurrences of many years, could not have attained a certain knowledge of the cauſes of diſeaſes, nor a competent method of treating them.

It requires a very fertile invention to make a few months voyage to the Weſt-Indies, or to ſit down there for a year or two (neceſſarily without practice, becauſe the inhabitants know too well the conſequence of employing newly-arrived doctors), and bring home materials for a book; or a method of treating diſeaſes, which will not have a pernicious tendency, if followed; or that can contain any thing uſeful, that is not pirated from others. This can only be done by long reſidence, great practice, and obſervation.

But the Engliſh are not the only people who write on diſeaſes they know nothing of, from experience: and direct phyſic and regimen by latitudes. There are other medical magicians, who can ſit at home, tell the tranſactions of every clime, and traverſe the Hygeian Zodiack

with omnipotent ſkill.—Our brethren on the continent are not behind-hand in this practice.

LIND, juſtly enough, remarks, that POISSONIERE and CHEVALIER, who both practiſed phyſic for two or three years in *Hiſpaniola*, and have written on ſome of the diſeaſes of that iſland, "had not proper opportunities of "obſerving the worſt ſymptoms, which attend "the diſtempers, ſo peculiarly fatal to Eu-"ropeans, on their arrival in the Weſt-Indies." But I can by no means agree with him, that ROUPPE, a Dutch phyſician, whoſe opportunities were ſtill leſs, and drawn from a ſingle ſhip of war, in an harbour, in the iſland of *Coraçoa*, where he was only two months, "has "furniſhed us with the beſt deſcription of thoſe "diſeaſes;" nor that his account of them "is full, clear, and maſterly; with the moſt "proper epithets for them, viz. *colliquative*, "*putrid*, and *ſpotted fevers*, &c. *"

It is not on account of theſe miſapplied epithets alone, that I diſſent; but becauſe there is in reality nothing original in ROUPPE's account of thoſe diſeaſes, excepting his errors. A ſhip's crew, whoſe habits had been broken down with the ſcurvy, lying in an harbour ſur-

* Page 134.

rounded

rounded with marſhes and ſtagnant waters, muſt have had diſeaſes peculiar to ſuch an origin; but to the diſeaſes of landſmen, and climate at large, they could have no more analogy, than the agues of the hundreds of Eſſex have to the epidemics of London.—ROUPPE, I think, aſſerts, that "the diſeaſe of "the *Guinea worm* is contagious *;" and LIND, I think, appears to believe him †.—With as much truth he might have ſaid, a thorn in the foot is contagious.—When he ſpeaks of the care of ſailors, and of diſeaſes peculiar to ſeamen, he ſpeaks like a man of ſenſe and obſervation.

The miſchief of publiſhing medicinal books, written on the authority of others, without the power of detecting their errors, is infinite; for certainly publications of this ſort, compiled from ſpeculation, hearſay reports, and extracts of letters from correſpondents, from being the worſt guides, are productive of the worſt conſequences ‡.

DAZILLE

* Page 284.

† Page 58.

‡ Dr. BARKER, in his *Agreement between Ancient and Modern Phyſicians*, to ſtrengthen GALEN's caution againſt bleeding in very *hot weather*, ſays, page 92, he had "been informed, by a

DAZILLE properly remarks on this ſubject, in his advertiſement, that able phyſicians can collect together "*Obſervations on Europeans in* "*the Colonies, and on Seamen*," made by others who were on the ſpot; but that it is indiſpenſably neceſſary to have practiſed a long time in the colonies, and on-board of veſſels, and there to have been much employed, and to know from repeated ſucceſs, and from what they have ſeen, themſelves, before they can judge of the utility, or the fidelity of the materials, of which their collections are compoſed †.

A French

"learned and ingenious gentleman, who has practiſed in "Jamaica, it is found to be much more dangerous to bleed "in that warm climate, than in the temperate one of Eng-"land." The Doctor's information was bad; and had it been otherwiſe, it does not apply to GALEN's meaning.

† "Si le Docteur LIND, cet homme juſtement célebre, "et le *traducteur* de ſon dernier ouvrage, Médicin d'un vrai "mérite avoient été aux Iles de *France* et de *Bourbon*; le "*premier* n'eût point écrit, et *celui-ci* n'eût pas tranſmis dans "notre langue (page 103, du premier volume), que ces "Colonies ſont des lieux *mal-ſains*, tandis que de toute la "terre habitable, c'eſt un des pays les *plus ſalubres*, où l'on "n' épreuve d'autres maladies, que celles qui y ſont appor-"tées du dehors."—Obſervations Générales ſur les Maladies des Climats Chauds. Avertiſſement, p. 11. Publiſhed in 1785, at Paris.

DA-

A French author, a Monſieur DE GARDANNE, undertook to publiſh Obſervations on the Diſeaſes of Seamen, very principally becauſe he was born in a ſeaport-town; as he ſays himſelf—but as his countryman DAZILLE ſays of him, "Monſieur DE GARDANNE n'ayant jamais paſſé les Mers *."

Monſieur DE GARDANNE's mode of acquiring his knowledge is curious and intereſting. "Né dans un port de mer, et naturellement

DAZILLE's opinion of the iſland of *Bourbon* is certainly confirmed by every perſon who has been there: "L'air y eſt "ſi ſain, et tout ce qui s'y produit y vient en ſi grande abon- "dance, et eſt ſi bon, q'une perſonne qui voudroit ſe ſéparer "du grand monde pour mener une vie retirée, ne pourroit "choiſir un meilleur lieu plus agréable que celui-là." LULLIER, *Voyage*, p. 110.

ORM, in his Hiſtory of the Military Tranſactions in Indoſtan, ſays, that "ſeveral families from France eſtabliſhed "themſelves here, in the iſland of *Bourbon*, ſoon after the "French took poſſeſſion of it, and from them are deſcended "the preſent inhabitants, who are now multiplied to the "number of 4000, of which 1000 are men capable of bear- "ing arms: theſe have not degenerated from their anceſtors, "but on the contrary, are a race ſo remarkable for ſtature "and proportion, as well as for health and ſtrength, that they "equal, if not exceed in theſe qualities, the moſt athletic "European nations. They are the only colony of Europeans "eſtabliſhed within the tropics, which have preſerved theſe "advantages." Page 93. Vol. I.

* Avertiſſement, p. 12.

"initié

" initié à la connoiſſance de l'art du naviga-
" teur, tant par un long ſéjour dans les places
" maritimes, que par l'habitude de vivre au
" milieu des perſonnes qui ont embraſſé cet
" état, je n'ai rien négligé d'ailleurs pour
" m'inſtruire à fond de ce qui pouvoit avoir
" rapport à mon ſujet, ſoit en méditant les
" auteurs qui m'ont dévancé dans la carriere,
" ſoit par des conférences aſſidues avec des
" perſonnes très éclairées ſur ce ſujet" *.

LIND has no quarter from this gentleman, for he ſays, " LIND prétend que le défaut de
" végétaux qui en eſt le principal défenſeur,
" n'y fait pas grand choſe ; qu'on peut même
" en guérir dans l'air infect de l'entre-pont.
" Mais ces idées ſyſtématiques ne doivent point
" prévaloir ſur celles que l'expérience avoit
" auparavant accréditées. Le ſcorbut eſt cauſé
" par l'air chaud et humide ; et tout ce que
" LIND avança pour établir une opinion op-
" poſée, *ſera combattu d'une maniere victorieuſe*,
" dans un Eſſai ſur les Maladies de Gens de
" Mer qui ſuivra de près cet ouvrage" †.

* Advertiſement, p. 11. to his publication in 1784, intitled, " *Des Maladies des Créoles en Europe*, &c. et Obſervations ſur " celles des *Gens de Mer*, et ſur quelques autres plus fréquem- " ment obſervées dans les *Climats Chauds*."

† Page 47.

This

This ſame gentleman undertook alſo to write on the *Diſeaſes of Creoles in Europe*; and on others more frequently obſerved in *hot climates*; becauſe he had conſulted authors who have written on thoſe ſubjects; and from the practice he had in *Paris*. "J'avois conſulté les "auteurs qui ont écrit ſur les maladies des "habitans des deux Indes.—Les nombreuſes "obſervations, que m'a fourni la pratique, "depuis qu' établi dans cette capitale *(Paris)*: "j'ai eu des occaſions plus fréquentes de les "connoître, et de les ſuivre dans leurs di-"verſes affections*.".

There is another evil with which the ſcience of phyſic is continually invaded; as if a knowledge of diſeaſes could be acquired in travelling poſt through a country. A tranſient practitioner, more zealous to diſtinguiſh himſelf, than to benefit mankind, no ſooner meets with a diſeaſe which he has never ſeen before, and perhaps does not remain long enough in a ſituation to ſee again, than he tranſmits an account of it to his agent, who tranſmits it to his literary friend; by whom it is converted into a purpoſe to ſupport ſome new hypothe-

* Avertiſſement, p. 1.

ſis,

ſis, or is recommended as a ſample of the diſeaſes of a country, and the treatment, as a ſtandard of practice. If this does not happen, when he returns home, and has acquired ſkill enough to gild the impoſition, he ſits down and compiles a book, by racking and tormenting the ſenſe of a variety of writers to his purpoſe; without ever knowing whether the diſeaſes he treats of are endemic, or the produce of accident, or particular conſtitution.—This is an outrage, founded on a contempt for the ſerious reflection of mankind, and is a premeditated miſchief againſt the welfare of ſociety.

Here I think it is proper to mention, that the deſire of putting a ſtop to theſe evils, had a conſiderable influence with me, in undertaking to write on the diſeaſes of hot climates; which diſeaſes, being but little underſtood in Europe, have been too often themes for impoſtors, for promoting diſingenuous, as well as deſtructive purpoſes.

I flatter myſelf from the reception which the preceding editions of this work have met with, that my endeavours have been attended with beneficial conſequences. Yet I am ſorry to remark

remark, that among mankind, I fear ſome will ever be found, over whom conſcience has no control. Such men are not to be checked in their career, whenever the chances of eſcaping detection are in their favour.

Even ſince the publication of the former editions of this work, ſeveral compilations, on Weſt-Indian diſeaſes have appeared, in their tranſit to oblivion *. Had they contained any thing new, it muſt have been the ſublime effect of inſpiration; for neither of them had four years incubation, in the Iſland, of which they were ſaid to be the offspring,—nor ſcarcely "a local habitation or a name!"

It is alſo proper to reſcue the profeſſion in the Weſt-Indies, from the imputation, which theſe medical *Buccaneers* have brought on it, in Europe; for, wherever practitioners can be ſuppoſed to ſtand in need of ſuch inſtructors, the ſtate of phyſic muſt be conſidered as deplorable indeed.

The reſident practitioners in the Weſt-Indies at preſent, are people of more ſcience, and of better education, than the practitioners in

* Vide Gentleman's Magazine for November 1791.

that

that part of the world were formerly; and to ſuch of them as were my contemporaries, and have had many years experience, the prejudices I had to encounter when I firſt publiſhed my opinions, are well known: and though I have the ſatisfaction to learn, that the doctrines I have advanced have made a great change in the treatment of diſeaſes, yet I find there are ſome erroneous principles ſtill retained, that ought to be eradicated,—and there is ſtill a defect in not extending the antiphlogiſtic proceſs ſufficiently in the beginning of inflammatory diſeaſes.

The notions of aſthenia, and putridity, ſo univerſally prevailed in Jamaica, at the time of my arriving in the iſland, that the word *inflammatory*, as connected with fever, was ſcarcely known; and copious, or repeated bleeding, was in general conſidered as an agent of death.

There had been violent contentions formerly on theſe points, particularly as referring to the yellow fever: but no perſon had ever defined that fever with accuracy, nor conſidered it as a genuine inflammatory diſeaſe.

The

The two unfortunate phyſicians WILLIAMS and BENNET, at Kingſton, who terminated their diſputes on this ſubject by killing each other in a duel on the 29th of December 1750, both, adopted the opinion that the yellow fever was a *bilious fever*, and gave it that appellation; and though WILLIAMS's intentions of cure were rational, yet it did not appear that he was able to diſtinguiſh this diſeaſe from others which are really bilious, and peculiar to that part of the world.

This want of diſcrimination had always exiſted in the Weſt-Indies; and the conſequence was, that cardiacs and refrigerants, evacuants and bark, emetics and bleeding, frequently, and fatally, uſurped the place of each other.

Againſt theſe errors in particular, it is neceſſary to warn inexperienced and tranſient practitioners; and ſuch in the navy and army, whoſe reſidence may not be long enough to acquire a thorough and competent knowledge of the endemics of thoſe countries. They muſt be guided by books; the beſt of which, thoſe who have been long in the habits of obſerving diſeaſes, are ſenſible, fall far ſhort of the deſign, and ſerve but as a guide to experience.

Barbadoes

Barbadoes has ever borne the palm of Weſt-Indian medical literature; *Jamaica* is greatly in arrears, though it has long been numerouſly ſupplied, with well-informed and judicious practitioners: among whom, Doctor DWARRIS held a very diſtinguiſhed place.

That diſciple of BOERHAAVE, through long and extenſive experience, removed many errors which had been eſtabliſhed there before his time, by the ignorant and illiterate, who had lawleſſly aſſumed the profeſſion.

He alſo ſucceſsfully oppoſed many inapplicable doctrines, which, imbibed in European ſchools, are often brought, improperly, into uſe in hot climates. This was of great advantage to thoſe who practiſed with him, as well as to the patients; who frequently eſcaped the ill conſequences of young doctors putting theory into practice.

But while I lament that poſterity can derive no benefit from knowledge that is not preſerved by written tradition, I am ſenſible of the reluctance and diſcouragement, which attend laborious literary purſuits in thoſe ſultry regions, *ſub curru nimiùm propinqui ſolis*. The mind

mind, enervated with the body, is roused to short-lived actions, by efforts that cannot last; and sinks again under the oppression of climate, to which all things in nature yield.

Hence arise great impediments to the advancement of medical art; and that knowledge which has been gathered through a long series of experience in those countries, generally dies with its possessor.

This must ever be a subject of regret; for it is there that nature assumes all her variety of modes, and discovers many appearances, which are concealed in temperate climates. An observer there will often find in her rapid changes, many fallacious systems overthrown, that have been begotten in closets by speculation in other parts of the globe.

Concerning what I have written, however it may be received as a contribution to the useful stock of medicinal knowledge, I shall at least be free from the charge of writing on diseases which I had not ample opportunities of knowing, during twelve years residence in the West-Indies; and of recommending a practice compiled from the authority of others, that I have never experienced myself.—So far I can

determine; but how I have written muſt be determined by others. It may be urged, perhaps, among many things, that I have treated with little complaiſance, the falſe lights of bad authorities. I wiſh it were in my power to extinguiſh them. They are injurious to mankind; and if it ſhall be found that I have increaſed the number, by adding to negligence and miſconception in the midſt of opportunity, the unprofitable toil of making my idleneſs and errors known to the world, time, I hope, will ſoon treat me in the ſame manner.—For I diſclaim all credit that may be acquired by adding to the miſeries of ſickneſs, the inſolence of conjecture, and the treachery of hypotheſis.

I cannot diſmiſs the preſent ſubject, in which my views have been principally directed to the avoidable, and to the remediable derangements of the body, without one ſolitary glance at thoſe derangements of the mind, which no regimen can prevent, nor medicine cure.

Hot climates adminiſter certain death to a "mind diſeaſed;" and where there is in the "memory a rooted ſorrow," or "written "troubles of the brain." The want of ſleep in

in the ſlighteſt indiſpoſition, is always alarming; and in the graver diſeaſes, of people who have naturally much irritability of habit, or ſome grief, or anxiety in the mind, it is the cauſe of ſo great a determination of blood to the head, with exceſſive action of the arteries of the brain, and ſo much perturbation of the animal ſpirits, that often admit of no relief nor compoſure, but what the unhappy ſufferer, after violent compulſive ſtruggles, phrenzy, and inflammation of the brain, finds in death.

Sometimes indeed he eſcapes this fate, to experience the miſerable alternative, of a long imbecillity of the faculties of the mind.

Therefore, let not the diſcontented in mind, nor the broken-hearted, hope to evade his cares and troubles, by changing to theſe climes; nor think that any paſſion which has ſtormed the breaſt, will abate its force by diſtance.—*Noſtalgia*,—that longing after home, exerts its painful influence in the remoteſt regions, and magnifies to danger, the moſt trivial indiſpoſition of either body or mind, when both are already half ſubdued by the heat and dread of climate. Thoſe whoſe happy days have not yet been clouded with misfortunes, let them be careful here, to preſerve tranquillity of mind, and

watch with caution over their paſſions.—The young and inexperienced, who have embarked with the falſe notion, that fortune has heaped up treaſure for them, to be delivered out gratis, let them alſo prepare for diſappointment; and let them avoid, at firſt arriving in theſe countries, entering into any ſerious engagement, or intricate concern, until they have made themſelves acquainted with the genius of the people, and their local laws: for fear any glittering allurement ſhould lead them into an inextricable labyrinth of difficulty and vexation, and conſign them to that country, "from whoſe bourne no traveller returns."

ON

MILITARY OPERATIONS

IN THE

WEST-INDIES.

SECT. I.

THE early part of the Weſt-Indian hiſtory is filled with melancholy relations of military diſaſters, ariſing from ignorance of the periodical changes, which the ſeaſons undergo in tropical countries. Yet it is ſtrange that theſe woful events, numerous as they have been, have ſerved for very little more, than as a theme for public commentary, and private lamentation.

Important as the proper ſeaſoning of troops for ſervice is, in theſe inhoſpitable climes *,

* Vide p. 58, et ſeq.

little will that conſideration avail to enterpriſe, where no attention is paid to the peculiar elements which in theſe regions, ſupporting but a feeble foe, will defeat the ſtrongeſt power, and render the utmoſt human force oppoſing, Titanic warfare.

Currents in various parts of the ocean, have been anxiouſly explored by navigators; but the effects of the various ſeaſons in different latitudes, characteriſtic of each climate, and their difference from local circumſtances in ſimilar latitudes, have never been attended to by philoſophers, nor regarded in practice, but by thoſe who have ſuffered from their influence.

In commercial voyages, neceſſity muſt be ſubmitted to; but in military expeditions, where the choice of time and ſeaſon is within the will of the directors of the enterpriſe, it is wonderful that they ſhould ever be ſo choſen, as to defeat the very intentions of the undertaking.

The ruin of the forces with VERNON, and, with them, the expedition, from the rainy ſeaſon in 1741 at *Carthagena*; and the unhappy HOSIER's unparalleled ſtory in 1726, before the

the *Baſtimentos* at *Porto-Bello*, with ſeveral leſs momentous diſaſters of the ſame nature, have not operated like misfortunes, to deter by their example. The former national concern, in which twenty thouſand lives were loſt, is more remembered from the flagitious enmity and jealouſy between the commanders (circumſtances notoriouſly diſgraceful to this country in every war), and the latter, from the political treachery which expoſed that miſerable fleet to deſtruction, than from the natural cauſe, which in both inſtances made the crimes of individuals ſo expenſive to the nation, and ſo calamitous to private families, by the loſs of many of their deareſt friends and relations.

In the beginning of the year 1780, an expedition was begun from Jamaica, againſt the Spaniſh territories in America.

This expedition was directed by GENERAL DALLING, at that time Governor of Jamaica. The plan, wherever it originated, was judiciouſly deſigned, and highly approved by Lord George Germain, then Secretary of State for the American department.

The intent was to cut off the communication of the Spaniards, between their Northern

and Southern American dominions, by *El Rio San Juan*, or, *the River Saint John*, as it is called by us, and the lake *Nicaragua*; from the interior boundary of which to the South Sea, is only four or five leagues, through a level country. Thus a connection from the Northern to the Southern Sea, was to have been kept up by us, a chain of posts established, and a communication opened, and protected, with an extensive coast, and all the richest provinces of South America.

Every person acquainted with the geography of the Spanish territories, of the defenceless state of this approach to them, and of the insurrections that then had actually taken place in *Santa Fé*, *Popayan*, and many parts of *Peru*, formed the most sanguine expectations. Happy was every man who had hopes of bearing any part in the enterprise. Enthusiasm never was carried to greater height, than by those who had promised to themselves the glory of shaking Spain to her foundation. The colours of England were, in their imagination, already even on the walls of *Lima*.

And so indeed they might have been, had GENERAL DALLING met with no obstacles in arranging the business in Jamaica, and had there

there been no delay in ſending out the force from England, which did not arrive until Auguſt, when it ought to have been on the Spaniſh Main in January.

Here was the origin of the failure; but even this perplexity and diſappointment would not have defeated the expedition, or at leaſt the Spaniards might have been ſaddled with the expence of it, if we could only have made a lodgment on the *Lake*, to have kept open the river: which might have been done, had the firſt detachment that GENERAL DALLING ſent, taken *San Juan* Caſtle in two hours, inſtead of ſetting down formally before it for eleven days.

The firſt detachment, conſiſting of about two hundred men, from the 60th and 79th regiments, one hundred of the Loyal Iriſh Corps, and two hundred Jamaican Volunteers, left Jamaica under the convoy of the Hinchinbrooke, a ſloop of war, on the 3d of February, 1780, and directed their courſe to the Muſquito ſhore, to take with them ſome of the Muſquito Indians*, who were waiting for their

* "The *Muſquito Indians*, properly ſo called, and who have been ſo juſtly remarkable for their fixed hereditary hatred of the Spaniards, and attachment to us, were formerly very

their arrival. On the 14th of February they arrived at *Cape Gratias à Dios*; diſembarked, and encamped about a mile from the ſea, on *Wank's Savanna*, an unhealthful ſituation.—Here they were joined by a party of men from the 79th regiment, from *Black River*. On the 10th of March the troops re-embarked, and took

very numerous; but they were much reduced ſome years ago by the ſmall-pox. Their preſent number is from ſeven to ten thouſand fighting men; formed into different tribes, both by nature and policy. By nature, from the general diſtinction, *pure Indians*, and *Samboes*; by policy, as living and acting under ſeveral chieftains, called King, Governor, General, and Admiral; each of whom has a different territory, and nearly independent juriſdiction; though the king has an imperfectly defined ſupremacy both in power and dominion.

"The General's people are Samboes, and inhabit from *Black River* to near *Cape Gratias à Dios*. The King's chief reſidence is about twelve leagues South of the Cape; his people are all Samboes, and his immediate precinct reaches to the Cape, and runs far up the country. The Governor's precinct joins to the King's, and extends between twenty and thirty leagues to the Southward, till it meets the Admiral's. The people under theſe two laſt chieftains are pure Indians.

"The *Samboes* are ſuppoſed to derive their origin from a Guinea ſhip, in which were ſeveral hundreds of Negroes, being wrecked on the coaſt above a century ago. Certain it is, that their hair, complexion, features, and make, clearly prove an African anceſtry; from which they have alſo inherited ſome of the worſt characteriſtics of the worſt African mind: for they are generally falſe, deſigning, treacherous, impudent, and revengeful.

"The

took their departure from *Cape Gratias à Dios*, and anchored at ſeveral places on the Muſquito ſhore, to take up our allies, the Indians, who were to furniſh proper boats for the ſervice of the river, and to proceed with them on the expedition: and on the 24th of March they arrived at the mouth of the river *San Juan*.

San Juan river, is the Northern branch, or mouth, of *Lake Nicaragua*, and is ſituated in North latitude 12°, 0′, Weſt longitude 83°, 45′.

The heat of the climate muſt neceſſarily be exceſſive; and this is augmented, in the courſe of the river, by high woods, without ſufficient intervals, in many places, to admit of being refreſhed by the winds.

"The *pure Indian*, are the Aborigines, but ſo called becauſe they are free from any mixture of Negro blood; and their general conduct gives a very favourable idea of Indian nature. They are ſeldom guilty of any poſitive evil, and often riſe to poſitive good, when poſitive good does not require much exertion of the mind. Their modeſty, docility, good faith, diſpoſition to friendſhip, and gratitude, ought to engage the regard and protection of all mankind; for the ſame virtues that render them amiable, will be likely hereafter to bring on their deſtruction."

Bryan Edwards.

The

The river has in its courſe many noiſome marſhes on its ſides; and the trees are ſo thick as to intercept the rays of the ſun: conſequently, the earth beneath their branches is covered with rotten leaves and putrid vegetables. Hence ariſe copious collections of foul vapours, which clog the atmoſphere. Theſe unite with large clouds, and precipitate in rains: the rains are no ſooner over than the ſun breaks forth, and ſhines with ſcorching heat. The ſurface of the ground, in places not covered with trees, is ſcarcely dry, before the atmoſphere is again loaded by another collection of clouds and exhalations, and the ſun is again concealed.

In the rainy ſeaſons of the year, months ſucceſſively paſs away in this ſort of viciſſitude, without the leaſt diminution of heat, excepting at nights, when the air is poiſoned by noxious, chilling dews. But ſometimes, during the *Periodical Rains* *, which begin about the middle of April, and with uncertain intervals of dry weather, end late in November, the torrents of water that fall, for weeks together, are prodigious, which give the river a tremendous aſpect: and from their ſuddenneſs and

* Vide p. 8.

impe-

impetuoſity, cannot be imagined by an European to portend any thing but a deluge. This burſting of the waters above, and the raging of the river below, with the blackneſs of the nights, accompanied with horrible tempeſts of lightning and thunder, conſtitute a magnificent ſcene of terror, unknown but in the tropic world.

Theſe circumſtances are not peculiar to this diſtrict, but are common to all the interior parts about *Carthagena*, *Porto Bello*, *Chagre*, the *Spaniſh Main*, and the *Muſquito ſhore*.

The amazing quantity of water that falls on the North and Eaſt ſides of the *Cordelleras* and *Andes*, is evident from the immenſe rivers that empty themſelves into the Northern ocean, from the river *Amazon* to the river *Miſſiſippi*: and the great dryneſs of the countries on the oppoſite ſide of thoſe mountains is alſo evident, from the ſmallneſs of the rivers that empty themſelves into the Southern ocean.

In the country of Peru, on the South of the Equator, though there are great fogs, and thick miſts, or *garuas*, as they are called, during their winter, which is from the latter end of June until the beginning of December, it never

never rains along the coaſt, within fifteen or twenty leagues of the ſea.

Of the little army deſtined for the *San Juan* expedition, after ſome delay at the mouth of the river, two hundred regulars, with ammunition and ſtores, proceeded up the river, with the Indians, in their ſeveral crafts. It being now near the end of the dry ſeaſon, the river contained very little water, and the ſhoals and ſandy beaches rendered the paſſage difficult. The men were frequently obliged to quit their boats, and unite their exertions to get them through ſome ſhallow channels. This labour continued for ſeveral days after they left the mouth of the river, until they arrived in deeper water :—then they made a quicker progreſs. However, they met with many obſtacles by currents, and occaſional rapids, or falls, which would have been inſurmountable but for the ſkill of the Indians, in managing the boats on thoſe occaſions.

On the 9th of April this advanced party arrived at a little iſland up the river, called Saint Bartholomew, which they took, after receiving a few ſhot from the enemy, by which two men were wounded. This iſland was occupied by the Spaniards as a look-out, and was defended

defended by ſixteen or eighteen men, in a ſmall ſemi-circular battery, of nine or ten ſwivels.

On the 11th of April the troops arrived before the caſtle of *San Juan*, and on the 13th the ſiege commenced. The ammunition and ſtores were landed two or three miles below the caſtle, and tranſported through the back woods to the place where the attack began.

San Juan caſtle is ſituated ſixty-nine miles up the river, from the mouth, and thirty-two from the lake of *Nicaragua*; and is a navigation of nine days, but for loaded boats much longer, from the harbour up to it. The return from it down by the current, is made in a day and half.

On the 24th of April the caſtle ſurrendered. During the ſiege two or three men were killed, and nine or ten wounded.

But here the tragedy begins; and the beſt concerted and moſt important enterpriſe that had been conceived during the war, was totally defeated, and a conſiderable national expence and mortality incurred, only to increaſe the jealouſy of the Spaniards, and their inſolence

lence to our countrymen, which has ever been without example among civilized nations.

From the unfortunate delay before the caſtle, which ſurrendered when it was ſummoned, the ſeaſon for the Spring periodical rains, with their concomitant diſeaſes, was now advanced; and the little army had loſt the opportunity of puſhing rapidly on, out of theſe horrid woods *, by which they were environed, to the dry, pleaſant, and healthful plains

* In theſe woods there are a multitude of antelopes, monkeys, parrots, tigers, and deadly venomous ſerpents. Vide p. 30.

In the march to the caſtle, as an advanced party under the command of *Captain Bulkeley*, an officer of diſtinguiſhed merit, of the 79th regiment (to whom I am indebted for this, and many particulars of the expedition), one evening were making fires, and preparing to refreſh and reſt themſelves, a ſoldier having retired a little way from the reſt, a tiger came behind him, and ſtruck him on the back with his paw, and jumped on him. The man inſtantly ſtarted up, diſentangled himſelf, and ran to his companions, frightened almoſt to death, with the tiger after him. The man fell down, and the tiger plunged headlong among the men, miſſed the one he was purſuing, and caught another by the neck, tore his clothes, and hurt his face; but without doing any farther miſchief, and from the noiſe and confuſion of the whole party, he fled away. From theſe he ran to a party of Indians who were accompanying them, and were now reſting at ſome little diſtance; but the Indians ſeeing him approach

plains, and agreeable towns of *Grenada* and *Leon*, near the lake, in the province of Nicaragua, which, from its ſalubrity and ſituation, is juſtly termed by the Spaniards, *Mahomet's Paradiſe*; and where they might have maintained themſelves, with the reinforcement which followed them from Jamaica on the 10th of April, until the ſeaſons would have permitted farther reinforcement, and the completion of a glorious enterpriſe;—for the natives of the country were ready to revolt, and waited but for a proſpect of ſucceſs. But here they were ſhut up in the caſtle, as ſoon as they were in poſſeſſion of it. The troops and Indians were attacked with fluxes and intermittents, and in want of almoſt every neceſſary, though the expedition was amply provided for by GENERAL DALLING; but the river was become ſo ſwoln and rapid by the rains, that the navigation from the harbour, where the proviſions and ſtores were, was tedious, and almoſt impracticable. Here the troops deſerted by thoſe Indians who had not already periſhed, languiſhed in the extremeſt miſery, and gradually mouldered away, until there

proach, made a great howling, which is always their cuſtom, and frightened the tiger away. He muſt have been much preſſed with hunger, not being firſt attacked, to purſue a man where there were fires, and a multitude of people.

was not ſufficient ſtrength alive to attend the ſick, nor to bury the dead.

Thus reduced, in the month of September they were obliged to abandon their flattering conqueſt, and return to the harbour, leaving a few men behind who were the moſt likely to live, to keep poſſeſſion of the caſtle, if poſſible, until farther orders ſhould be received from Jamaica.

The Spaniards retook the caſtle as ſoon as the ſeaſon permitted, and, with it, thoſe who had not ſtrength enough to make their eſcape.

The crews of the veſſels and tranſports that convoyed and carried the troops, ſuffered conſiderably by diſeaſes which the ſeaſon produced, while lying on the coaſt: and about a thouſand ſeamen loſt their lives.

Of about 1800 people who were ſent to different poſts, at different embarkations, to connect and form the various dependencies of this expedition, none of the Europeans retained their health above ſixteen days, and not more than 380 ever returned; and thoſe, chiefly, in a miſerable condition. It was otherwiſe with the negroes who were employed on this

this occaſion; a very few of them were ill, and the remainder of them returned to Jamaica in as good health as they went from it*. Of the officers who periſhed, the following is nearly an accurate account.

60th Regiment.		Lieutenants	5
Lieutenants	3	Enſign	1
Enſigns	3	*Black Reg. Volunteers.*	
79th Regiment.		Captain	1
Major	1	Lieutenants	3
Captain	1	*Armed Veſſels.*	
Lieutenants	5	Captains	2
Enſigns	3	*Artillery.*	
Royal Iriſh Corps.		Lieutenant	1
Captains	2	Commiſſary	1
Jamaican Volunteers		*Navy.*	
Captains	4	Captain	1
Lieutenants	4	Lieutenant	1
Enſign	1	Maſters	2
Quarter Maſter	1	*Marines.*	
Legion Corps.		Lieutenants	2
Captain	1	Surgeons	4
Lieutenants	5	Surgeons Mates	7
Batteaux Corps.			—
Lieut. Colonel	1	Total	69
Captains	3		

* It was the ſame at the taking of *Fort Omoa* from the Spaniards. On that expedition, half of the Europeans who landed, died in ſix weeks. But very few negroes; and not one, of 200, that were *African* born. The *Creole* negroes did not bear hardſhips ſo well.

The ſurvivors of the party, after they left *San Juan* caſtle, embarked for *Blue-Fields*, an Engliſh ſettlement about ſixty miles to the north of Saint John's river, where moſt of them died.

SECT.

SECT. II.

I HAVE related more of the *San Juan* expedition, and its conſequences, than I ſhould have done, had it not formed part of the buſineſs of a campaign in which I was employed; beſides conſtituting the moſt ſtriking example to be found in hiſtory, of the ill effects of expoſing men to the rigour of the wet ſeaſons in hot climates. I have ſuppreſſed much more of this expedition, as irrelative to medicinal hiſtory; not for want of authentic materials, nor for want of diſapprobation of many circumſtances with which it was connected. But as the failure of that undertaking has been buried, with many of its kindred, in the ſilent tomb of government, I hope I have not diſturbed its repoſe, but for the benefit of mankind; in which, I have omitted all relations concerning individuals, and elucidations which might gratify that power, at whoſe debaſement the blow was wiſely meditated, and ought to have been effectually applied.

If Spain could ſo eaſily reconcile to herſelf breaking the peace with England, without provocation, for the laſt war, and to aſſiſt in eſtabliſhing an example, and power, for her own deſtruction, however defective ſhe might have been in political ſagacity, ſhe has but done that moral juſtice to herſelf, that the world in general has long thought to be her due. For ſurely if the vengeance of offended morality ſhould ever be awakened to puniſh empires, Spain will be torn from her foundation, to expiate the horrid ſacrilege ſhe has committed, in diſhonouring the name of God, and making religion wade through torrents of innocent blood, and ſanctify the murder of twenty millions of Indians.

From the revolutions which have already happened, and the natural and political cauſes which ſtill muſt operate, it requires no great divination to foretel, that this expedition will not be the laſt; and that they may be attended with ſucceſs, I have eſtabliſhed a beacon, to ſhew where the dangers lie, to which thoſe muſt expoſe themſelves, who undertake enterpriſes againſt countries at ſeaſons of the year, when the elements fight for them, and render them impregnable.

Spain, in her American dominions, has long exulted in their ſecurity, which the diſtance from European powers has given them, and in the ſecrecy in which ſhe has kept the knowledge of thoſe dominions, by fallacious hiſtories, and ſuffering none to enter their ports, nor to have communication with her ſubjects. But inducement will ever remain to encourage an invaſion of many of the Northern parts of thoſe countries; for, the ſame cauſe which makes an enterpriſe perilous to the aſſailants, will ever operate to expoſe thoſe places to inſults from their enemies.

The depopulation of many of the Northern and Eaſtern frontier garriſons, from the deſtructiveneſs of the climate, frequently leaves them without a ſufficient number of people in health to attend the ſick, before they are relieved. The complement of troops allotted for the defence of each place, is generally cut off by death every three years; and the interior countries are conſtantly drained to ſupply this amazing waſte of human beings. The governors accept their appointments with aſſurance, if they ſurvive, of promotion in healthful provinces.

When it will be the fate of thoſe countries to raiſe up a friend, and experience a reverſe of fortune, by revolution, or how long they will remain objects of plunder and ſlavery, time muſt diſcover.

Should other nations * turn from this vulnerable part of the Spaniſh monarchy, I think the North Americans will not. That nation, ſpirited and enterpriſing, without mines, without money, and without external commerce, will not long remain a race of farmers, and be ſatisfied with virtuous poverty, when the means

* The Engliſh territories, from their contiguity, and ſupported by Jamaica, had every advantage for attacking the Spaniſh dominions. Theſe territories commenced at *Cape Catouche*, N. Lat. 21°, 30′, W. Long. 88, and ended at *San Juan* River, N. Lat. 12°, 0′, W. Long. 83°, 45′, including the two diſtricts of the Bay of Honduras, and the Muſquito Shore. The *Bay of Honduras* commences at *Cape Catouche*, and ends at *Cape Honduras*. The *Muſquito Shore* commences at *Cape Honduras*, and ends at *San Juan* River. The internal boundary and extent of the Muſquito ſhore it is difficult to aſcertain; as we derived our right from the ceſſions of the Indians, our limits were as indefinite as theirs. And if the diſtant mountains which bound the Spaniſh territories behind, be conſidered as the inland line, we poſſeſſed a country there, more than half as large as Portugal. The three principal ſettlements are at *Black River*, *Cape Gratias à Dios*, and *Blue-fields*.

of

of enriching and aggrandiſing themſelves and their country are within their reach. It is not in nature to ſtifle thoſe ſtruggles of temptation, in which national policy and individual intereſt, are ſo ſtrongly united.

Beſides, extinguiſhing European tyranny in the weſtern hemiſphere, is a debt which North America owes to the world. It is an undertaking worthy the ſpirit of that republic.

All commercial nations would derive advantage from this event; and it is the only ſource North America can ever have, when population has increaſed, beyond cultivation, to arts and manufactures, for the influx of gold and ſilver into her country.

Whenever America embarks in this buſineſs, the power of Spain cannot prevent her final diſſolution in the Weſtern world. The *Floridas*, which the Spaniards ſecured after the war, through jealouſy and fear, will be no barrier againſt the North-Americans. They will not make a circuitous attack through thoſe countries on *Mexico*; nor march through deſerts and wilderneſſes, to lay down their arms to the firſt oppoſers.

Every

Every man in North-America is by nature a General, for ſuch an enterpriſe as this; where rapidity and ſurpriſe inſure ſucceſs, and regular encampment, approach and fight, defeat: and where *Homerian* wiles and ſtratagem are more requiſite, than the ceremonious courage, and expenſive formalities, of European warfare.—It was thus that CORTEZ* and PIZARRO enſlaved thoſe countries: and it was thus that the renowned buccaneer, HENRY MORGAN, performed his various exploits there, againſt the Spaniards.

When one ſurveys the terraqueous globe, and reflects on its unjuſt participation; when one ſees what a ſmall number of inhabitants, with induſtry and good laws, make of rocks, ſwamps, and deſerts, and that ſloth and tyranny turn to no account millions of human beings, and millions of acres, in the fineſt and moſt fertile regions of the earth;—when one reads the hiſtory of the Spaniards, there is an

* CORTEZ left the *Havannah* for the conqueſt of *Mexico*, on the 10th of February, 1519; murdered all the Indians before him, excepting one tribe or two of parricides which aſſiſted him; entered *Mexico* on the 8th of November, and ſoon after had *Montezuma* in fetters in his own houſe. This was indeed expedition.

holy

holy zeal that inflames the heart with the ſpirit of retribution, for the immenſe depredations which they have committed on the works of nature, to obtain their Mexican and Peruvian dominions, and for the uſes they have ſince made of thoſe ill-gotten, but ineſtimable poſſeſſions.

WAFER, an Engliſh ſurgeon, ſays, he and ſome others landed at *Vermejo*, in Peru, in 1687, and marched about four miles up a ſandy bay: "all which," he ſays, "we found "covered with the bodies of men, women, "and children, which lay ſo thick, that a "man might, if he would, have walked half "a mile, and never trod a ſtep off a dead "human body. Theſe bodies, to appearance, "ſeemed as if they had not been above a week "dead; but if you handled them, they proved "as dry and light as a ſponge, or piece of "cork. After we had been ſome time aſhore, "we eſpied a ſmoke, and making up to it, "found an old man, a Spaniſh Indian, who "was ranging along the ſea ſide, to find ſome "dried ſea weeds, to dreſs ſome fiſh, which "his company had caught; for he belonged "to a fiſhing-boat hard-by. We aſked him "many queſtions, in Spaniſh, about the place, "and how thoſe dead bodies came there? To "which

" which he returned for anſwer, that in his " father's time the ſoil there, which now " yielded nothing, was green, well cultivated, " and fruitful. That the city of *Wormia* had " been well inhabited by Indians; and that " they were ſo numerous, that they could have " handed a fiſh, from hand to hand, twenty " leagues from the ſea, until it had come to " the Inca's hands: and that the reaſon " of thoſe dead bodies was, that when the " Spaniards came and blocked up, and laid " ſiege to the city, the Indians, rather than " lie at the Spaniards mercy, dug holes " in the ſand, and buried themſelves alive. " The men, as they now lie, have with them " their broken bows, and the women their " ſpinning wheels and diſtaffs, with cotton " yarn upon them *."

FREZIER, a French voyager, who was alſo in Peru, in 1712, confirms the ſame account: He ſays, " The vale of *Hilo*, in which there " are not, at preſent, above three or four " farms, formerly maintained an Indian town, " the remains of which are ſtill to be ſeen, two " leagues from the ſea; a diſmal effect of the " ravages the Spaniards have made among " the Indians.

* Voyage and Deſcription of the Iſthmus of America.

" There

" There are ſtill more moving marks of the " misfortunes of that poor nation, near *Arica*, " above the church of *Hilo*, and all along the " ſhore as far as the point of *Coles*, being an " infinite number of tombs, that when they " dig at this very time, they find bodies almoſt " intire, with their clothes, and very often " gold and ſilver veſſels. Thoſe I have ſeen " are dug in the ſand the depth of a man, and " incloſed with a wall of dry ſtone; they are " covered with wattles and canes, on which " there is a bed or layer of earth, and ſand " laid over, that the place where they were " might not be obſerved. They were ſo terri- " fied, that they thought they muſt all die, " when they were informed, that the Spa- " niards had not ſpared even their beloved " ATABALIPA, who among them was looked " upon as the offſpring of the ſun, which " they worſhipped. Therefore, to eſcape out " of their hands, they fled as far as they could " Weſtward, to implore the mercy of the ſun; " but being ſtopped by the ſea, they buried " themſelves alive on the edge of it *."

* Relation du Voyage de la Mer du Sud, p. 160.

But

But even Spaniſh inquiſitorial policy itſelf, which has ſo often found annihilation a ſhorter road than converſion, cannot extinguiſh the eternal flame of local patriotiſm.—This, the only guardian of the houſehold gods, in every country, is as dear to mankind as their ſacred altars, and is venerated in every clime.

The deſcendants of Europeans, natives of Spaniſh America, feel that attachment to their ſoil, which nature has planted in every being; and do not ſubmit to accumulated impoſts, and groan beneath the inſolence of office, and ſee the mortifying diſtinctions, that neither place of truſt, nor honour, is repoſed in any hands but European Spaniards, without the moſt pungent indignation, that ſhakes even the prejudices of religion.

As to the Indians, cultivation and induſtry are carried no further by them, than is neceſſary for their exiſtence. The Governors are not the only people that take upon them to pillage the Indians; the merchants, and other Spaniards who travel, take boldly from them whatever they want; and if the owners dare to

ſpeak

ſpeak a word, they are paid with blows: ſo that in many places thoſe people, being worn out with ſuch vexations, keep nothing in their houſes, not even to eat. They ſow no more *Maiz*, or Indian corn, than is requiſite for the family, aad hide in ſome caves the quantity they know, by experience, they ſhall have occaſion for through the year. They divide it into fifty-two parts, one for every week in the year; and the father and the mother, who alone know the ſecret, go every week to bring out a week's allowance.

Theſe people being driven to deſpair, by the hardneſs of Spaniſh uſage, there is no doubt, as FREZIER ſays, but they only wiſh for an opportunity to ſhake it off. But even in this wretched condition the Spaniards have never been able to ſtifle their idolatry, for the memory of their beloved *Incas*.

All the circumſtances of the death of *Atabalipa*, the laſt of the *Incas*, whom *Francis Pizarro* cauſed to be murdered, are well known.

The love they bore their native chiefs, whom they conſidered as tender parents, in their golden

golden days of liberty, makes them ſtill ſigh for a return of thoſe times, of which traditions have been handed down to them by their anceſtors. In moſt of the great towns of *Peru*, up the country, they revive the memory of the death of *Atabalipa*, by a ſort of tragedy they act in the ſtreets, on a certain day once a year. Endeavours are conſtantly uſed by the Spaniards to ſuppreſs this ceremony, and they have of late years debarred them the uſe of ſtages, on which they repreſented the death of that *Inca*.

In a country thus prepared, though plunder and rapine might meet with oppoſition, ſhould a well-concerted plan, by any foreign power, ever be adopted to give it aſſiſtance, there will be no difficulty in liberating the inhabitants, and eſtabliſhing ſome equitable government, under which the natives, and other inhabitants, may live in happineſs, and have a free and commercial intercourſe with other parts of the world, and enjoy the fruits of their induſtry, and thoſe bleſſings, which nature has there abundantly diſtributed, and which ought to be converted to the benefit of mankind.

The

The *Mexicans* will not be behind-hand: their injuries are deeply engraved. The Indians there alſo, have faithfully recorded a comprehenſive deſcription of the vaſt ſlaughter of their countrymen, in the ſubverſion of their freedom; and of the impious murder of *Montezuma*, by the treacherous *Cortez*, in his own hoſpitable manſion.

SECT. III.

THE force that had been long expected, and that was to have given effect to the *San Juan* expedition, arrived in Jamaica on the firſt of Auguſt, 1780; and after having been embarked many months too late for the campaign for which it was deſtined, it was afterwards delayed by a ſix months paſſage from England, by contrary winds.

The 85th, 92d, 93d, and 94th regiments, under the command of GENERAL GARTH, an approved good officer, conſtituted this force. The 93d and 94th, on their arrival, were in a miſerable condition: the former brought the gaol-diſtemper, from England, and on the voyage moſt of thoſe who did not periſh, were ſo reduced, as to be unable to ſtand the climate, or to bear the inconveniences to which they were expoſed, and almoſt all of them died in Jamaica.

The firſt battalion of the 60th, and the 79th and 88th regiments, were already in the iſland.

The

The above force, with the Loyal Iriſh, and ſeveral irregular corps, with armed boats for the ſervice of the Lake *Nicaragua*, was thought fully adequate to the undertaking, had it been aſſembled in time to have embarked from Jamaica at a proper ſeaſon of the year, to have puſhed their conqueſt until they had ſecured a permanent lodgement in the heart of the Spaniſh dominions.

But if thoſe people who remained in poſſeſſion of *San Juan* caſtle, had been able to keep it until the ſeaſon for ſending reinforcement arrived, the enterpriſe had now new difficulties to encounter; for the Spaniards had employed all their ſtrength to fortify the entrance of the lake above the Caſtle, which at firſt was in a manner defenceleſs. But after the account arrived of the fate of thoſe who began the buſineſs, and that the Caſtle was again in the hands of the Spaniards, all farther idea of expedition was abandoned.

On the diſembarkation of theſe troops in Jamaica, the flank companies of each regiment encamped at *Caſtile Fort*, and afterwards at *Up Park*, where they were joined by the flank companies of the 60th, 79th, and 88th regiments.

The encampment continued during the months of Auguſt, September, October, and November; in which months it rained at different times, conſiderably, on twenty-eight days. Encamping at this ſeaſon of the year, in that iſland, the moſt unhealthful, it is not to be ſuppoſed was a matter of deſign. There were no barracks to receive the troops, and it was a matter of neceſſity. Two temporary barracks were cauſed to be erected, through the good ſenſe and vigilance of GENERAL GARTH, at *Up Park*, as ſoon as poſſible after their arrival; in which as many men as they could contain were placed. But more of the men might have been better accommodated, if ſome difficulties had been removed, that the judicious propoſal made by MAJOR RICHARD CREWE, who commanded the light companies, might have been adopted; which was to occupy, as barracks, the empty houſes in the town of Kingſton. That excellent officer wiſely conſidered, that health in hot climates was not eaſily to be recruited, and that keeping the men together was of little utility, where rigid diſcipline was impracticable.

I was then Surgeon-General of the iſland. The care of the camp-hoſpitals devolved on me.

me. In an encampment, circumſtanced as this was, when the days were ſuffocatingly hot, from the irregularity and deficiency of the ſea-breeze, at this ſeaſon of the year,—when the nights were cold, on account of the land-wind, —expoſed to the autumnal rains; the men lying on the ground; their tents not ſufficient to defend them either from the intenſe heat of the ſun, or from the coldneſs of the night, or from the rain; health was not to be expected: it was impoſſible to be, there.

It may be eaſily imagined that our camp-hoſpitals were ſoon crowded. Raw European troops expoſed in ſuch a climate, to all its inconveniences, muſt ſuffer in the moſt ſevere manner; and of this ſmall body of men of the flank companies, by the 12th of September, we had in *Caſtile Hoſpital* 109, in *Rock-Fort Hoſpital* 88, aud in *Up Park Hoſpital* 70, in all 267, chiefly of Fluxes, Bilious, and Remittent Fevers.

Our hoſpitals at *Caſtle Fort* and *Up Park* were ſmall boarded buildings; and conſequently extremely hot, crowded, and unclean. *Rock-Fort* barrack was chiefly uſed as a convaleſcent hoſpital; which, notwithſtanding its unhealthful ſituation, we were obliged to oc-

cupy for want of a more proper place. Here the men, inſtead of recovering, ſuffered relapſes, and were harraſſed with intermittent fevers, and chronical diarrhœas, after the removal of their primary diſeaſes, in the other hoſpitals.

As the reſtoring ſoldiers ſpeedily to health is of the firſt conſequence, in climates where a ſhort illneſs renders them uſeleſs—where their places cannot be ſupplied, and where diſeaſes are inevitable,—convenient and proper hoſpitals are of the utmoſt importance: and in all caſes where a great number of ſick are collected together, the ſituation, as well as the conſtruction of an hoſpital, requires conſideration.

An hoſpital ſhould be not only ſituated on an healthful ſpot, but in the vicinity of a market; where good water, wood, and every neceſſary can be ſupplied without fatigue, delay, or trouble. The evils ariſing from the reverſe of this, require no animadverſion. Let us conſider the evils attending the improper conſtruction of hoſpitals in hot climates. Inſtead of their being lofty and ſpacious, and built in the manner I have deſcribed in the preceding diſſertation *, we find a contrary mode adopted

* Pages 53, 54, and 55.

in

in all the military hoſpitals in the Weſt-Indies; and it is generally thought ſufficient to have a multitude of doors and windows, in all places appropriated for the ſick: theſe doors and windows are kept conſtantly open, to make the hoſpital what is called *airy*.

Hoſpitals and ſick rooms ought to be well ventilated, no doubt; but as the ſick ſhould not be ſtifled with heat, ſo they ſhould not have currents of wind directed on their bodies: in this caſe, no diſeaſe can poſſibly be thrown off, or complete a criſis by the emunctories of the ſkin. How then can men recover from fevers, chiefly from obſtructed perſpiration, expoſed to a ſtill increaſing cauſe? To this ſource we may principally attribute the multitude of what are generally called convaleſcents; which, in truth, for the moſt part, are people labouring under chronical complaints, from the imperfect ſolution of acute diſeaſes.

Sick bodies, in hot climates, ſhould be kept cool, by being placed in rooms ſufficiently ſpacious, to afford an uniform temperature of air:—it is death to cool them by evaporation.

It cannot have eſcaped the notice of any perſon who has reſided in the Weſt-Indies, that ſitting long in the confined direction of a breeze, brings on a feveriſh, diſagreeable ſenſation; ſometimes pains in the face, neck, and joints, and a great degree of fever.—How then muſt it be with a patient, who in a little hut of an hoſpital, is placed at a door-way, or in a current of wind, or raiſed on a platform to the level of an open window, to prevent ſuffocation from heat, if a critical ſweat ſhould break out? The ſweat is ſuddenly ſtopped; and if death do not enſue, the diſeaſe (which under the kind operation of nature would end in a day or two) is lengthened out into months.

The coſt of a good hoſpital is nothing in the ſcale of expence. It is a ſoleciſm in œconomy to have a bad one. A bad hoſpital may deprive the ſtate, in a few months, of as many men, whoſe value would amount, in political calculation, to a ſum ſufficient to build a good one. This fact, the army dreadfully demonſtrated in Jamaica, during the war. I loſt more value in men at *Caſtile Fort*, and at *Up Park*, in three months, from the miſeries of the hoſpitals alone, than would have been adequate to

the expence of erecting a proper one, for all the troops in the iſland.

The very ingeniouſly-contrived moveable hoſpitals, lately conſtructed at Somerſet-houſe, for the ſervice of the army in the Weſt-Indies, I am ſorry to ſay, will not correſpond in utility with the merit of their inventors; who ſeem principally to have had in view, only one of the requiſites for an hoſpital,—that of ventilation. Buildings like theſe, made of boards, with nearly flat roofs, and without height or ſpace, can make no reſiſtance againſt the ſcorching vertical ſun of tropical countries; nor againſt the chilling damp of night. The temperature of the air within muſt be nearly the ſame as it is without, in the open atmoſphere (which I found to be the caſe, on examining one of them by a thermometer, on an hot day in July): and unleſs they be placed in the ſhade of trees or buildings, I do not conceive it poſſible for ſick people to exiſt in them, during the heat of the day, in cloſe ſultry weather, in the Weſt-Indies.—However, they are preferable to tents; and when any ſervice of ſhort duration is to be carried on in war, where buildings are not likely to be found, and encampment neceſſary, they will be uſeful.

Great

Great as our inconveniences were in Jamaica, thoſe who encountered the *San Juan* expedition ſuffered much more; and it was long doubtful whether thoſe, who after experiencing every hardſhip in life, were thrown into the river, or lay unburied on its banks, a prey to wild beaſts, in ſight of their helpleſs companions, were not in a more enviable ſtate than the ſurvivors.

Thoſe who returned to Jamaica, were harraſſed with obſtinate intermittents, or diarrhœal, or dyſenterical complaints; or with painful enlargements of the liver, or ſpleen. Their complexions were very yellow, and their bodies emaciated. Some whom I attended, after their return, that had been long ill on the Spaniſh Main, had their intellects impaired, and their ſenſes at times diſordered, during their weak and convaleſcent ſtate.

The late Doctor Charles Irving *, who was on the Spaniſh Main, and was to have commanded a corps of Indians, which he was

* This gentleman invented an improved method of obtaining freſh water, from ſea water, by diſtillation; for which he obtained a reward of 5000l. from parliament.

raiſing for that ſervice, was a ſkilful phyſician. —He informed me, that in the intermittent fevers, the *delirium*, which commonly came on in the paroxyſm of the fever, after a few returns of it, ſometimes remained during the intermiſſions, which ſoon became irregular, from reduplications of the acceſſions; and that ſeveral men wandered about in a phrenzy, and died raving mad.

Imbecillity of mind, as well as of body, is a common conſequence of long and obſtinate diſorders in hot climates; and I have frequently obſerved that the mind has been greatly impaired after irregular and harraſſing intermittents, and ſometimes a temporary inſanity has enſued. This muſt have been alſo obſerved by others; but as far as I know, no perſon, except SYDENHAM, who was the firſt that noticed it, has mentioned it as occurring in practice. He ſays, he has often found, when the patients had been extremely debilitated by long continuance of the diſeaſe, the doubling of the fits, and repeated evacuations, that they have been ſeized with a madneſs, when they began to recover, which went off proportionably as they gathered ſtrength *: but that ſome-

*Plus ſemel tamen adverti, ægros a morbi diuturnitate, et paroxyſmorum ingeminatione, accedentibus ad malorum cumulum

ſometimes from injudicious evacuations only, it has degenerated into a miſerable kind of folly for life †.

But there is another cauſe of theſe diſorders of the brain in the Weſt-Indies, which neither injudicious evacuations, nor climate, nor the nature of the diſeaſe, are in the leaſt acceſſary in producing, though generally attributed to them. This cauſe is the *Peruvian Bark*.

In a letter I received from DOCTOR IRVING, while he was at *Blue-fields*, he ſays, "From "neglect of your perſpiratory practice, or "from being deſtitute of proper neceſſaries, I "am convinced many have been loſt on this "expedition. Nature wanting vigour to diſ-"charge the incipient fevers by the pores, "which ſhould have been ſupported by warm "clothing and ſudorific practice, &c. But by "truſting wholly to bark, an early coma came "on, and a paralyſis of the limbs, and ſoon "after death. I have ſeen a multitude die at

cumulum evacuationibus repetitis, ad ſummam debilitatem redactos, ubi primum cœperint convaleſcere, in *maniam* incidiſſe, quæ pari cum illo paſſu receſſit, quo eorumdem vires de novo redintegrabantur.——P. 84.

† Poſt evacuationes fortiores adhibitas, in miſeram quandam *ſtultitiam* degenerans, non niſi cum ipſa ægrorum vita terminatur.——P. 102

"*St.*

" *St. Juan's* without a point of variety from " this ſtated."

He found that the ſtomach required the utmoſt attention: for the energy of that organ giving way, was ſeldom reſtored. That nothing was ſo gratetul as *London Bottled Porter*. Wine was neither ſo much deſired, by the ſick, nor ſo ſerviceable in corroborating, and keeping up the powers of the ſtomach; which, like the reſt of the body, from the ſlighteſt indiſpoſition, was ſoon reduced to an uncommon ſtate of debility. With London bottled porter, and ſtrong infuſions of ſnake root, or cinnamon, and a diſcreet uſe of diaphoretics, and a cautious uſe of bark, he conquered many of thoſe intermittents, which from incautious evacuations, and emetic tartar, would have degenerated into fluxes, and remittents, and from an exceſſive and untimely uſe of bark, into other diſeaſes, which art could not have remedied.

Bark, in unſkilful hands, is a precarious remedy even in intermittents in the Weſt-Indies, and ſhould never be long perſiſted in, without evidently good effects: and then not without the frequent intervention of calomel.

If

If the fever be a recent one, and has a tendency to a remittent, the premature uſe of bark impedes the ſecretions, cauſes ſtrictures in the capillary veſſels, and fixes immoveable obſtructions in the brain; whence follow the train of evils enumerated. This I have ſo often ſeen, that I can but wonder at writers not obſerving more caution, in adviſing bark early in the remiſſions of fevers: —nay, even in their exacerbations, and where the fever is continual *. But ſuch practice is repugnant to reaſon; and I know from experience, that fatal effects in other reſpects alſo have been occaſioned by it. Indeed, bark cannot be given to advantage, while the viſcera are loaded with ſharp, pituitous, and glutinous matter, and the ſanguiferous and lymphatic veſſels ſtuffed and clogged, with heated and ſizy blood and lymph—impediments that muſt remain while the fever does, and cannot be removed while there is a remiſſion only. Where there is any tendency to inflammation in the habit, bark increaſes the impetus of the blood, and by conſtricting the veſſels, and leſſening the diameters of the ſecretory and excretory ducts, it operates as a direct poiſon.

* Lind, p. 120.

In

In intermittents alſo which ſucceed acute diſeaſes, bark, without great care, does more harm than good. It increaſes thoſe obſtructions in the abdominal viſcera, which almoſt always follow ſevere diſorders in hot climates; and which bark often converts into incurable *ſcirrhi*, or dropſies.

At the ſetting in of autumnal diſeaſes, intermittents are always attended with a greater ſecretion of bile, than they are afterwards, when the ſeaſon has farther advanced. And the earlier the autumnal ſickly ſeaſon commences, the more the liver is affected, and the greater is the quantity of bile attending them. For which reaſon, bark at that time is improper, when given without perfect intermiſſions. A patient can take much more bark, without injury, in a December intermittent, than he can in an Auguſt one. Yellowneſs in the eyes, tenſion of the abdomen, and a cough, are generally produced by a few doſes of bark, in the beginning of autumn; and this is an infallible ſign, that the body is not properly prepared for it. But when the autumnal intermittents do not ſet in until November, bark, in general, may be taken with ſafety, without much previous preparation, becauſe they are ſeldom attended

tended with thoſe exceſſive bilious ſecretions, and that febrile diſpoſition, which accompany them in earlier months.

Spring diſeaſes, in hot climates, though not always ſtrongly marked, have in general an inflammatory tendency; which tendency gradually declines with the year, and diſappears in autumn.

The autumnal diſeaſes, in Jamaica, in the year 1776, ſet in, in November; the ſeaſon was cold and rainy. Fevers came on with a ſhivering; but a good intermiſſion generally ſucceeded the firſt paroxyſm; in which, if eight or ten drams of bark were given, all went on well: if not, the fever returned the next evening, and the following day only a remiſſion ſucceeded—bark then would not anſwer. The third fit univerſally ended in a low continued fever, which required early bliſters, cordials, and ſtimulants, as the patients all ſunk very much, and many died.

The type of diſeaſes is very often diſſimilar, in the ſame ſeaſon, in a diſtrict only of a few miles. In hot, marſhy, low ſituations, autumnal intermittents have generally a putrid tendency; and ſometimes after a few paroxyſms degenerate

degenerate into irregular, low, fevers, accompanied with colliquative ſweats, and diarrhœas. Here the early uſe of bark, in every climate, is proper; and the almoſt indiſcriminate adminiſtration of it, ſeldom attended with danger.

This locality of diſeaſe ought to be well conſidered, by thoſe who write for the information of others; and ſhould not be confounded with the endemics of a country, or of a climate at large: for ſuch varieties occur in every part of the world.

On examining the ſituation of *Modena*, in Italy, I found many local circumſtances combined to make it probable that TORTI's extenſive adminiſtration of bark, had better reaſons to ſupport it than his theory; or than his adverſaries admitted. However, TORTI adopted the important diſtinction, between a *corruptive*, and a *depurative*, intermittent; which is a diſtinction, I wiſh to inculcate between the tropics. In the former, which chiefly belongs to the autumnal ſeaſon, TORTI's doctrine may ſometimes apply; and "ab ipſo exordio per "corticem ſuppremi poterit*;" but in the

* Therapeutices Specialis, Lib. I. cap. viii. p. 60. Ed. Venetiis, 1769.

latter, if there be not an intermittent diſpoſition in the ſeaſon, or ſome local putrid tendency, it will be found that bark is not always neceſſary in the cure of intermitting fevers; and that frequently, by obſtructing ſome deſign of nature, does great miſchief, and particularly when given too early *.

In caſes where the utility of bark was in the leaſt degree equivocal, and where a reaſonable quantity had been taken without ſucceſs, I generally deſiſted from it, and had recourſe to other means.

The method I uſed in intermittents, under theſe circumſtances, was, to order the patient to bed, and give him a vomit, at firſt, about two hours before the acceſſion; and after its operation, a warm opiate to promote perſpiration, with proper dilution. The next morning I gave a doſe of rhubarb and magneſia; and a few grains of calomel every night, for two or three ſucceſſive nights. If the ſkin, or eyes, were tinged with bile, or the patient

* Curandum eſt ante omnia, ne præmature nimis hic "cortex ingeratur, ante ſcilicet quam morbus ſuo ſe marte "aliquantiſper protriverit, niſi collabeſcentes, et jam fractæ "aegri vires, eundem temporius ſumendum eſſe dictaverint." SYDENHAM. P. 93.

coſtive,

coſtive, I gave a ſmall doſe of rhubarb and magneſia on the following mornings; otherwiſe not. This proceſs was intended to remove, or prevent, obſtructions in the abdominal viſcera, and glands, which always render intermittents difficult to cure, and ſometimes make them fatal. But the cure turned on a regular courſe of warm diaphoretics, and the following draught, in conjunction with this proceſs, which always broke the force of the fever, ſhortened its duration, and gave fair intermiſſions, without heat and quick pulſe, for taking bark with effect. Sometimes the diſeaſe was carried entirely off without bark.

℞ Aq. Menthæ ſimpl. (vel Julep. e Camphor.) ℥iſs. Theriac. Androm. ʒj. vel ʒiſs. Sp. Mindereri ℥ſs. M.

This draught was given about an hour before the acceſſion, the patient being firſt put to bed, and perſpiration encouraged with wine whey, and herb teas. This was repeated until the intention was anſwered, in the ſame manner, before every return of fever: the patient remaining in bed until each paroxyſm had terminated in a complete ſolution by ſweat.

When this method without bark, when bark was inadmiſſible, did not ſtop the progreſs of the diſeaſe, and when united with bark, it was ſtill ineffectual (which was ſeldom the caſe, as bark is moſt powerful in its effects, and leaſt injurious to the habit, if taken while the patient is in bed, or with a courſe of diaphoretics, or ſo guarded and managed that the pores of the ſkin may be kept freely open), I omitted the bark, and in its ſtead gave two ſcruples of *Calamus aromaticus* root, powdered; increaſing or diminiſhing the quantity as circumſtances required. This powder was given in a morning faſting, if poſſible, and repeated three, four, five, or ſix times a day, as the intermiſſion and ſtomach would permit, in a glaſs of wine, or a ſtrong infuſion of ſnake-root.

Sometimes I purſued SYDENHAM's method *, particularly in tertians, and in quotidians, where the ſecretion of bile was enormous; which was, to order the patient to bed, and raiſe a ſweat by warm dilution, about two hours before the coming on of the fit: and as ſoon as a ſweat was raiſed, I gave a warm pur-

* P. 92.

gative,

gative, combined with an opiate and a diaphoretic. This cauſed what SYDENHAM calls two contrary motions, ſweating and purging; which not only ſhortened the duration of the fit, but cleared the firſt paſſages thoroughly, and made way for giving bark, without injuring the liver or ſpleen. Some intermittents, where bark had been taken without effect, yielded to gentle purging, with frequent doſes of magneſia and lemonade.

After the October rains intermittents became the prevailing diſeaſes in the camps in Jamaica. And though they were ſucceſsfully treated, in the preceding manner, the men, from being expoſed, were conſtantly relapſing, and ſoon rendered unfit for military duties. Many dyſenteries terminated in intermittents; and among the convaleſcents in both diſeaſes, many changed from one to the other.

The DYSENTERY, as in all military operations, being our moſt deſtructive enemy, through the whole of the encampment, it is neceſſary to give the hiſtory of that important diſeaſe in a ſeparate treatiſe; and I ſhall in this place take notice of another diſeaſe only, that appeared, and diſappeared very ſuddenly in the camp, and proved ſo often fatal, that it diſheartened

the men who were ſeized with it, took away all hopes of recovery, and diſmayed their companions. I have the ſtrongeſt inducement for mentioning this malady, as I have the happineſs to be able to deſcribe its cure; which beſides being uſeful in practice, the ſubject may ſerve as a leſſon to ſhew that there are diſeaſes, which from experience only, and not from their ſymptoms, the curative indications can be aſcertained and anſwered.

This diſeaſe was a *Putrid Bilious Fever*, that invaded the men at *Up-Park* Camp. The inhabitants of Kingſton, and the neighbourhood, were greatly alarmed by it; and from the ſuddenneſs with which ſeveral men died, who were ſcarcely thought to be ill, and from the extraordinary yellowneſs of their bodies after death, it was imagined that ſome peſtilence had been brought to the iſland.

It made its appearance towards the end of October; on the 3d of which month the weſt end of the iſland ſuffered ſo much from an hurricane *; and it was every where the wetteſt, and moſt tempeſtuous month that had been known for many years: and though it rained

* Vide p. 12.

but

but eleven days at camp in this month, five of them in the beginning of it were ſucceſſive, and continued through the greater part of the nights of thoſe five days. After theſe rains, and winds, which beat down the tents and one of the temporary barracks, the night land-winds conſiderably increaſed, and came down from the mountains unuſually cold, continuing during the whole month of November. The days were now as remarkably hot for the ſeaſon of the year; there being but little ſea breeze, and that only for a few hours, in the middle of the day. November was a dry month, for there had been but three ſlight ſhowers, in the beginning of it.

This fever came on with ſudden loſs of ſtrength; naufea; clammineſs in the mouth; the eyes were dull, and tinged with bile; they were alſo ſunk in the head; there were beſides, in thoſe who died, even from the firſt attack of the diſeaſe, ſeveral other marks of Hippocratical face; particularly the ſinking in of the temples. The pulſe was low and quick; the ſkin was moiſt, with heavineſs in the head, tenſion and uneaſineſs in the abdomen, and great anxiety; the ſkin ſoon became of a deep yellow colour, accompanied with coma, cold thin ſweats, and deep laborious hiccuping. It

ended on the ſecond, third, or fourth day in death.—Some of the groſs and plethoric, died ſoon after being attacked, in convulſions.

The EARL OF HARRINGTON, who commanded, reſided near the hoſpital, while this diſeaſe ſpread ſuch terror, that almoſt every perſon who could, avoided the camp. His exertions and ſolicitude for the health of the men, merited the greateſt praiſe. He did all that could be done, circumſtanced as we were. He deſired I would inform him whether the diſeaſe was infectious, as was generally believed, or not; in order, if it were, that ſuch prudential meaſures might be taken, as would prevent its ſpreading, and becoming univerſal. I informed him it was not contagious.

The coming on of this diſeaſe, indicating no conſiderable degree of fever, neither from the pulſe nor the ſkin; without vomiting or purging; and from the extreme weakneſs into which every perſon ſunk who was attacked, led to a mode of treatment at firſt, which did not prove ſucceſsful.

Thoſe who had taken their curative indications, from the treacherous appearance of the diſeaſ, began with ſupporting the powers of

of life, and preſſing for an opportunity of giving bark.

This is an error in all bilious diſeaſes, and is often committed in others, merely becauſe they are called putrid. It could not be productive of good effects, when nature was endeavouring to relieve herſelf by the means of the liver, and unloading the habit into the inteſtinal canal.

It was indeed a very uncommon ſpecies, or rather degree, of bilious fever; and more rapid in its fatal effects, than any fever I had ever ſeen. But this does not warrant the giving it a new appellation, for it was truly the *Putrid Bilious Fever* of thoſe countries, in its utmoſt degree, without hæmorrhage, or any diagnoſtics of irritation; and in ſuch a ſtate as no perſon has before deſcribed, nor had I ſeen any thing nearly like to it for many years: though an inferior degree of it, the *Bilious Remittent Fever*, is a common diſeaſe, and with which the *Endemial Inflammatory Fever* (called the *Yellow Fever*) has been ſo much confounded by writers.

Though I admit, in compliance with cuſtom, that to be a bilious diſeaſe, which is accompa-

companied with ſuch an evidently preternatural ſecretion of bile, as diſcolours the eyes, or ſkin, and appears in all the excretions, whether there be fever or not; yet I conſider bile here as an effect, and an index of the ſtate of the liver, and not as the cauſe of the diſeaſe: and that the preſence, or abſence, of irritability in the body, with acrid ſecretions in the ſtomach and bowels, perform all thoſe operations which are commonly attributed to bile.

It is curious to reflect on the effect of ſome paſſions, when the mind has been ſtrongly agitated. In ſome habits, it appears in a general nervous affection; in others, in violent actions of ſome particular viſcus, as the liver.

Why does ſudden grief, or anger, frequently, in an inſtant, bring on vomiting, or purging of bile?

Can it be ſuppoſed that the cauſe of theſe operations is bile, and that thought in a moment ſhould acrimonize it?—Phyſiology accounts for the actions of the ſtomach in the *Calculus Cyſticus*, and *Nephritis*.

But bile is always to be carried off by artificial means, when any preternatural quantity

is

is excreted into the bowels. Not that it has any ſeptical properties, tending to diſſolve the blood in a living ſubject, as has been ſuggeſted from fallacious experiments unconnected with life; but becauſe the liver is in a plethorical ſtate, and undergoing too much action, and acquiring a turgeſcence and plenitude in the *Pori biliarii*, and *Ductus hepaticus*, that muſt ſtifle its functions, unleſs this ſurcharge be removed ſpeedily through the *Ductus communis* into the *Duodenum*, and obſtruction prevented, by ſtimulating the inteſtines, and increaſing their periſtaltic motion.

An omiſſion of this, is another error often committed in Weſt-Indian practice.

It happened to me at the camp, as it does to others who have the ſuperintending any medical department, not always to have ſeen the patients on their being firſt attacked: putrefaction had far advanced, and the patients were under the uſual courſe of antiſeptics and cordials, frequently, before I ſaw them.

As theſe medicines did not produce their natural and proper effects, and as at firſt every man that was ſeized, died,—ſometimes two, three,

three, four in a day ;—I began to conſider where the error of treatment lay (for all diſeaſes that ſooneſt deſtroy the frame, are ſooneſt cured, when we have found out the right method of treating them) : and whether it might not originate from the dread of evacuations, on account of ſo much debility in the beginning of the diſeaſe, previous to giving bark.

On ſurveying the practice with all the reflection I was capable of, I was convinced this was the caſe ; and immediately adviſed purging at the firſt onſet of the diſeaſe, and directed it to be continued, until contra-indicated by weakneſs. But ſo far was the reſult of that apprehenſion from being confirmed by the event, that it was found that the men acquired ſtrength, in proportion as they diluted and were purged.

The ſtools were charged with a deep ſaffron-coloured offenſive bile, and the urine was of a deep yellow ; theſe continued often unchanged after repeated cathartics. It ſeemed as if the very blood was nothing but bile, and that the body had the power of converting the fluids which the men drank, inſtantly into bile : for many patients had twenty ſtools a day, for three days ſucceſſively, without intirely changing the appear-

appearance of them. When the ſtools altered, the ſkin altered; and then, and not till then, after this practice was followed, did I give any bark.

The purge we uſed was *Manna* and *Cream of Tartar*. We made a ſolution of theſe ingredients in barley-water, in a large tin kettle in the hoſpital, with which the men were ſupplied, to keep them conſtantly purging, as long as was neceſſary; diluting plentifully with water-gruel, or barley-water. We did not loſe one man after this mode of treatment was adopted.

During the encampment of the flank companies, the 85th regiment, celebrated for the gallant youths who were its officers in Jamaica, was alſo encamped at *Caſtile Fort* *, and commanded by MAJOR HENRY PHIPPS.

This

* The Camp at *Caſtile Fort* was on a riſing ground, about a quarter of a mile from the ſea, which was to the South, and near the foot of the mountains, which were to the north, about five miles to the eaſtward of Kingſton.

The Camp at *Up-Park* was on a flat, open plain, near the Long Mountain behind Kingſton, about two miles from the ſea, to the ſouth, and about the ſame diſtance from the Liguanea mountains, to the north. The ſituation of both camps was airy, free from ſtagnant water, marſhes, and unwholeſome exhala-

This officer, notwithſtanding the evils and inconveniences that ſurrounded us, making the beſt of his ſituation, ſhewed that there are none ſo bad, in which ſome reſource may not be found, by minds poſſeſſing aptitude and energy. From the judicious method in which he arranged the tents, and ſhaded them with the boughs of trees; from a conſtant attention not to expoſe the men to the ſun unneceſſarily; from ſelecting proper times of the day for exerciſe, and military duties; from not only dividing the men in meſſes, with a non-commiſſioned officer to each meſs, but taking care that *their money was laid out properly*, by which means they always ſat down to a good and wholeſome dinner; and above all, from obliging them to take off their wet linen after rain, and to put on flannel, and never ſuffering them to remain wet in body or feet; he gave a ſtriking inſtance, by the health and appearance of that regiment, that many difficulties may be ſurmounted, when profeſſional talents are united with active zeal, and directed by judgement and humanity.

exhalations; but expoſed to the force, and tranſitions of all the elements. Both camps were ill ſupplied with water—*Caſtile Foot* by diſtant carriage, and *Up-Park* by an inconſiderable well or two.

The clothing that our troops were furniſhed with in the laſt war, in the Weſt-Indies, was too heavy for the climate. The French clothing for their troops was more judiciouſly adapted. But great avantage would accrue to either, if every ſoldier were ſupplied with a thin flannel ſhirt or two; not made ſo ridiculouſly ſhort as their linen ſhirts always are, but long and full, otherwiſe a flannel ſhirt will be uſeleſs after waſhing. This ſhould be put on after they have been in the rain, or when any particular night-duty, in bad weather, expoſes them on ſervice. This is among the beſt preſervatives of health, when men are obliged to lie in the field, or on the ground in hot climates, where a poſt is to be maintained, or where a defence, or an attack is to be made, attended with delay.

But delay never ſhould be made in an *attack*, for the reaſon that makes the great *Fabian* maxim, "cunctando," a certain *defence* in hot climates, when the defenders are under cover, and their enemy expoſed to the weather, which they muſt be to guard againſt alarms and ſurpriſes; and if beſiegers can be kept from poſſeſſing any town, or extenſive buildings, they may be left to climate and the

"tented

" tented field :" for ſickneſs will prevent European troops ſucceeding in any attempt, where the ſervice exceeds ſix weeks.

The principal reaſon that the Buccaneers retained their health, in their deſperate enterpriſes, in the Weſt-Indies, better than regular troops have ever done was, beſides being ſeaſoned to the climate, they ſeldom remained long in a place. But whenever they departed from this cuſtom, either from neceſſity in a ſiege, or from choice after conqueſt, ſickneſs was the invariable conſequence.—The hiſtory of every military operation, in this part of the world, ſhews the neceſſity of rapidity, and the miſchief of delay. The troops under VERNON and WENTWORH, encamped after the battle of *Saint Lazare* at *Carthagena*, in the month of April 1741, were reduced, in two days, from 6645 men, to 3200.

It is hardly to be credited what men can go through wrapped up, as it were, in flannel. The coldneſs of the night air then, has a medium to paſs to their bodies ; which breaks the force of its impreſſion, and prevents the ſuppreſſion of perſpiration. It is warmth without incumbrance :—a great conſideration to a ſoldier. Beſides, flannel acts as a friction to the ſkin, and keeps the pores open

open: it alſo creates an uniform atmoſphere round the body. Occaſional clothing of this ſort is abſolutely neceſſary for officers and ſoldiers on actual ſervice in hot climates; not only as a defence againſt the inconveniences ariſing from rains, dews, and night air, but to put on after having been wet, much fatigued, and heated: that perſpiration may not be ſuddenly checked, and that the body may cool gradually. After ſickneſs, a flannel jacket worn next the ſkin often prevents relapſes.

Doctor Irving, with a ſmall party of men, lay in the woods on the Muſquito Shore fourteen days and nights, during the rainy ſeaſon of 1780, without taking off his clothes, while he was exploring a paſſage to the Spaniſh ſettlements up Bluefields River. He eſcaped without the leaſt injury to his health, having blankets with him, and being clothed in a ſhirt, ſhort jacket, breeches and ſtockings, all made of flannel. The others not uſing the ſame clothing ſuffered ſeverely, without expoſing themſelves to the ſame fatigue or danger.

Attention to the health of ſoldiers, and *quid valeant humeri*, are the firſt objects for an

officer's conſideration, particularly in countries and climates where men are not to be recruited; nor ſickneſs ſoon removed, nor health ſoon regained. A thouſand things may be laid down in European theories, that would be deſtructive in the woods of America, and under the burning ſun between the tropics.

Diſcipline here, particularly with new troops, ſhould never be of that kind, nor degree, to exceed the proportion of exerciſe which is conducive to health. They ſhould not be harraſſed with manœuvring and the manual exerciſe. A ſoldier ſhould be nurſed. All drudgery and labour ſhould be performed by negroes, and others, inured to the climate; and a ſoldier ſhould be admitted to no exertion, until ſome important object is to be carried into execution.

That the greater part of the men in regiments periſh abroad, before the remainder learn to take care of themſelves, is an old complaint: but if the evils ariſe from cauſes which the ſervice can, it ought to remedy them.

The condition of a ſoldier ſhould place him in the eyes of his officer, as a child; and, like

like a child, he is ſometimes troubleſome and refractory, and muſt be ſerved againſt his will. But let it be conſidered, that prudence and good ſenſe contribute very ſparingly to that part of an eſtabliſhment, where there is ſo much diſproportion, between rewards and puniſhments. Yet there is a gallantry in a ſoldier, that is always contented; nay more, it is always enthuſiaſtic, when he ſees his officer intereſted in his welfare, and will not ſuffer him to be wronged.

Theſe reflections are not the offspring of ſpeculation, but the reſult of experience; and important as they are, they have never before been the ſubject of practical diſcuſſion. They are now offered to the ſerious attention of thoſe who are deſtined for ſervice in tropical countries. There, it is probable, they will learn from the moſt painful conviction, that unleſs ſickneſs be prevented, no regiment can make any figure that will gratify an officer who is fond of his profeſſion; and that it is this alone which can inſure ſucceſs to any military operation: for thoſe ſoldiers who have been once ill, from the tedioufneſs of recovery, and from frequent relapſes, are not only rendered totally incapable of ſervice for that campaign,

but become an additional incumbrance to the movements of the army, and by the neceſſary increaſe of attendance and orderly-men in the hoſpitals to take care of them, a further diminution is made of the forces, that might be employed on active ſervice in the field.

SECT.

SECT. IV.

THE ſame miſchiefs which attend delays in offenſive war, and the ſame medical conſiderations which relate to military operations in hot climates, apply in a conſiderable degree, to military operations in every climate; and particularly to ſuch as are carried on in Europe, in the autumnal ſeaſon of the year.

Expedition and health are the ſoul of martial enterpriſe: and next in importance, in an army, to that general who beſt underſtands the ſecret of not expoſing his ſoldiers to diſeaſes, is that phyſician who beſt knows how to meet their cauſes, and remove them the ſpeedieſt.

Curing diſeaſes in an army, is never well done, unleſs it be done quickly. There never are conveniences in an army for long ſickneſs. A ſoldier's bed is often only a blanket, and all his neceſſaries contained in his knapſack. The attacks of diſeaſes are here always ſudden and violent. The cure, if poſſible, ſhould be *jucundè*—but it muſt be *citò*, if it all. For the diſeaſes of a few days in an army, have ſometimes de-

feated, and often nearly ruined, many of the greateſt deſigns in the annals of wars.

On the 23d of October, 1415, HENRY the Fifth, with his Engliſh archers, would not have "affrighted the air at Agincourt *," if impetuoſity had ſuffered the French to remain quiet; and had the battle been delayed another week, his whole army would have been ruined.

He embarked with 50,000 men from *Southampton*, on the 18th and 19th of Auguſt 1415, and landed at *Havre de Grace* on the 21ſt. He marched to *Harfleur*, beſieged, and took it. During the ſiege, which was not ſix weeks from the time of his leaving England, he loſt nearly half of his army by the bloody flux. Two thouſands died of it in one day. RAPIN ſays, "the flux, which was got among his troops, "had made, and ſtill did make, ſuch ravage, "that not above the fourth part of his army "were able to bear arms. This diſtemper "had not ſeized the common ſoldiers only, "but even the moſt conſiderable perſons were "not free from it. The *Biſhop of Norwich*,

* SHAKSPEARE, Henry V. Chorus, Act. 1.

"and

" and the *Earl of Suffolk*, were already dead of " it. The *Duke of Clarence*, the king's " brother, the *Earl of Arundel*, and ſeveral " other officers of diſtinction, were ſo dan- " gerouſly ill, that they were obliged to re- " turn to England in hopes of cure."

In 1650, in the month of September, OLIVER CROMWELL's army was ſo reduced by fluxes, from a few days rain, before *Dunbar*, that he had, probably, never been protector of England, if the Lord had deferred delivering the Scotch army into his hands, a few days longer *.

In 1743, on the 28th of June, the night after the battle of *Dettingen*, a heavy ſhower of rain fell, preceded by very hot and dry weather, to which the Engliſh troops lying all night on the field of battle without tents were expoſed, and the night following they encamped on wet ground. In leſs than eight days, five hundred men were ill with the dyſentery, and within ſix weeks, half that army was afflicted with it.

* When CROMWELL ſaw the Scotch army in motion, he ſaid, " The Lord is going to deliver them into our hands."

The combined armies of Auſtria and Pruſſia, amounting to nearly 100,000 men, under the command of the king of PRUSSIA, and the duke of BRUNSWICK, which this autumn, 1792, entered France, for the purpoſes declared in the duke of BRUNSWICK's manifeſtos of the 25th and 27th of July, at *Coblentz*, being ſtopped in their career, were in one month rendered, chiefly by the dyſentery, incapable of any other operation than retreating.

A great army remaining on the ſame ground, in autumn, ſuppoſing the ſeaſon not ſo uncommonly wet as this has been, muſt ſoon be ruined by diſeaſe.

The filth alone of an immenſe body of men, ſtationary in the field in autumn, and compreſſed as this army muſt neceſſarily have been, was ſufficient to give riſe to every ſpecies of peſtilence; and from the contaminated ſtate of the air which ſurrounded them, it was impoſſible that the troops could recover from any diſeaſe whatever.

Under ſuch circumſtances, when a numerous army can no longer advance, that moment is the ſignal for retreat. Therefore, theſe commanders, after the 2d of September,

tember, when they poſſeſſed themſelves of *Verdun*, and found they could proceed only fourteen miles farther, remained in the field only to fill their hoſpitals. For, from this period their army began to decay rapidly; and by the 12th of October, when they were obliged to ſurrender *Verdun*, on being ſummoned, their ſick had augmented ſo much, from various cauſes, and became ſo great an embarraſſment, that when they were compelled to quit France, they found their whole army in ſuch a miſerable condition, that even their retreat was attended with danger, and accompliſhed with difficulty, in the midſt of the havock of death.

I find, and indeed the fact has ever been the ſame, that the Pruſſians were very healthy during their marches towards France, from their own country; and alſo afterwards, while they were moving from place to place, and kept in motion:—but when arreſted in their progreſs, fixed to one ſpot on the marſhy plains of *Champagne*, and expoſed to the evils I have mentioned, a more ſudden, or extenſive ſcene of military diſaſter, was never exhibited.

Thus this vaſt, and wonderfully appointed force, which had taken almoſt three years, in

" dreadful

"dreadful note of preparation," was able to remain only two months in France.

Longwy, the firſt, and laſt place they occupied, was given up to them on the 23d of Auguſt; and they ſurrendered it by capitulation, on the 23d of October.

The occurrences and event of this ſhort, but memorable expedition, ſhew the importance of ſkilful phyſicians, in a great army;—which, far from home, is always a great evil,—and has more wants than are generally calculated:—when health is one of them, numbers effect nothing, but in their recoil multiply diſtreſs, and increaſe confuſion.

ON THE

DYSENTERY*.

PART THE FIRST.

THE DYSENTERY, or BLOODY FLUX, being a diſeaſe ſo deſtructive to ſoldiers in camps and garriſons, and a conſtant attendant on all military operations, it is a medical inquiry of the

 utmoſt

* When this treatiſe was firſt publiſhed, ſeparately, in England, it was remarked, in a literary journal, that curing the dyſentery by ſudorific medicines, was not a new doctrine; and ſince the firſt edition of this book appeared, the ſame journal obſerves, that, "promoting perſpiration *after* "the inteſtines are well emptied, is the uſual mode of treat-"ing the diſeaſe, and the only effectual way of curing it."—But that I "ſeem to place too much efficacy in ſudorifics ‡."

Another of theſe literary journals ſuggeſts, that the diſeaſe, from yielding eaſily to my ſudorific treatment, was "a pecu-

‡ Monthly Review for June 1788.

"liar

utmoſt importance to inveſtigate the diſeaſe, on every occaſion, with the greateſt attention, in hopes of finding ſome method to put a ſtop to its devaſtation. It is a ſubject in which the welfare of mankind is deeply intereſted, and often the glory and honour of a nation. If the cauſe of humanity were not alone a ſufficient motive to induce to this reſearch, we need but turn our

" liar epidemic;" and " ſuſpects ſtrongly that this plan " would not ſucceed ſo well in this climate*."

The authors of theſe remarks appear candid, but leſs fortunate than in ſome others which they have honoured me with. If they had given the ſubject due conſideration, the former would have known, from reading, that no perſon, before me, antient, or modern, has ever mentioned, as a ſyſtem, treating the dyſentery, after the primæ viæ have been cleanſed, with ſudorific medicines only; and from inquiry among practitioners in London, or any where elſe, that it is not " the uſual mode of treating the diſeaſe."— The latter gentleman, from my words, had no reaſon to ſuppoſe, it was " a peculiar epidemic," to which I was applying the doctrine, but to the various epidemics of a long ſeries of years. And though it is not hitherto " the uſual " mode of treating the diſeaſe;" yet I foretel that it will be ſo, whenever any ſevere epidemic ſhall make its appearance, and will be " the only effectual way of curing it." I have the ſatisfaction to aſſert, from my own experience, that it does ſucceed well in " this climate," and in every other climate of Europe, where the practice has gained, and is gaining ground faſter than could reaſonably be expected, conſidering what piles of venerable abſurdity ſtand in its way, ſurrounded by an hoſt of idolators, defending their ſuperſtition.

* Critical Review for February 1788.

our eyes on the political field; there we may behold the beſt concerted meaſures defeated by its influence. The page of military hiſtory weeps leſs for the ſlain in battle, than for thoſe who have fallen victims to this calamity.

We have greatly to lament, that the labours of medical writers hitherto have met with ſo little ſucceſs, and that their beſt endeavours have only ſhewn, how little we know, and how much we have to learn, in treating this diſeaſe.

Happy ſhall I be, if the following obſervations may contribute to remove ſome of the many difficulties which preſent themſelves, and induce a further proſecution of the ſubject, until the diſeaſe is brought under the command of the moſt improved and certain practice.

The word Dyſentery, in Latin *Dyſenteria*, and in Greek Δυσεντερια, is derived from δυς, with difficulty, and εντερα, the inteſtines; importing a difficulty, or a diſturbance of the functions of the inteſtines.

The Dyſentery is termed by the Latin writers *Difficultas Inteſtinorum*; CELSUS calls it *Tormina*; GALEN, ἑλκωσις εντερων, CÆLIUS AURE-

AURELIANUS, *Rheumatiſmus cum Ulcere*; and it is thus deſcribed by HIPPOCRATES in lib. 3, cap. 5. *de Victus Ratione Sanorum*:—

Ὁκοταν δε θερμαινομενου του σωματος, καθαρσις δριμεια γενηται, το τε εντερον ξυεται, και ἑλκουται, και διαχωρεεται αἱματωδεα, τουτο δε δυσεντερίη καλεεται, νουσος χαλεπη τε, και επικινδυνος.

"When the body is heated, and there is an acrimonious purging, with corroſion and ulceration of the inteſtine, and bloody ſtools, the diſeaſe is called a Dyſentery, and is a ſevere and dangerous diſorder."

GALEN *de Locis Affectis*, Lib. VI. Cap. 2. ſays, Χρη δ' ὑμας εν τῳ παροντι λογῳ, τας κυριως ονομαζομενας δυσεντεριας ακουειν, ως σημαινουσης της προσηγοριας εντερων Ἑλκωσιν.

"It is neceſſary to underſtand properly the meaning of the word Dyſentery, as the appellation itſelf ſignifies an ulcer of the inteſtines."

And that,—

Εν αρχῃ μεν ουν εκκρισις χολης δακνωδους ἱκανως, επ' αυτου γινεται, μετα δε ταυτην ακολουθει ξυσματα των εντερων· ειτα τοις ξυσμασι συνεκκρινεται τι μικρον αἱματος, ὑνικ' ηδη δυσεντερια το παθος εστι.

"At

" At firſt there is a diſcharge of acrid bile, then abraſions of the inteſtines follow, afterwards blood is excreted with the abraſions; and this conſtitutes a true Dyſentery."

He then proceeds,—

" When abraſions of the bowels only are diſcharged, it is to be obſerved, whether any fat ſubſtance is voided with them; for then the ulcer is in the large inteſtines. When blood is voided, it is neceſſary to obſerve whether it is mixed univerſally with the excrements, or whether it is only ſuperficially upon ſome part of them. If it be mixed with them, it ſhews that the ulcer is in the ſuperior inteſtines; if it appear on the ſurface, the ulcer is in the inferior inteſtines. The ſame obſervation applies in regard to the abraſions, in ſome degree; and they will alſo ſhew by their proper ſubſtance, which inteſtine is affected. Dyſenteries that ariſe from the liver, are to be diſcovered in this manner;—in the beginning, a thin bloody ſanies is diſcharged, then by the diſeaſe increaſing, a thick humour, not unlike the fæces of red wine; but no abraſions are voided; and ſometimes, during an interval of two or three days, the evacuation is ſuppreſſed, then returns again, with diſcharges, much

much worſe than the former; which is not the caſe when there is an ulcer in the inteſtines: in which the patient has neither large ſtools, nor long intervals between them. When the ulcer is in the rectum, the diſeaſe is called a *Teneſmus*; it is attended with vehement ſtraining, and a conſtant deſire of going to ſtool, voiding at the ſame time but little, which in the beginning is pituitous and pinguious, but in length of time, a ſpecies of abraſions is alſo voided: but through the whole of the diſeaſe, the fæces from the ſuperior inteſtines, have nothing of this ſort mixed with them."

"Some writers mention, that after a great ſtraining to ſtool, preceded by a vehement pain, a ſort of callous ſtones have been voided, not unlike thoſe which are generated in the bladder: but I have never ſeen them, nor have I ever heard of any perſon who has."

He ſays, in his Comment on the Epidemics, *Lib. III. Comm.* 3, *Sect.* 70, "that there are two ſorts of Dyſenteries; one from an ulceration of the corroded inteſtines, and the other, when a copious diſcharge of blood from the veins of the inteſtines is evacuated."

In

In *Lib. III. Cap.* 7, *de Symptomatum Cauſis*, he ſays, "there are four different ſpecies of bloody excretions, from four different cauſes; one of pure blood, from the loſs of a limb, or from foregoing ſome accuſtomed exerciſe. Another, when from an imbecillity of the liver, a watery blood is diſcharged, like the waſhings of raw fleſh. The third, when a black and ſhining blood is diſcharged. In theſe three ſpecies of excretions, the diſcharges are large, but in the fourth, the ſtools are ſmaller and more frequent; ſometimes pure blood is voided, and ſometimes in a concrcted ſtate; ſometimes a ſmall quantity of matter; alſo ſloughs of ulcers, which are called Εφελκιδες; beſides membranous ſubſtances, which are parts of the inteſtines themſelves; with theſe, excrements are often voided, having drops of blood in them. This laſt is an exulceration of the inteſtines, and which only, ſome writers will allow to be properly called a Dyſentery."

In *Lib. II. Cap.* 5. *de Locis Affectis*, he ſays, "griping pains in the inteſtines are cauſed by a corroding humour, for which reaſon the dyſentery is always preceded by theſe pains; which with an ulceration of the inteſtines, the modern phyſicians, and many of the ancients,

call a Dyſentery. Some of the latter not only term this, but alſo any bloody excretion, a Dyſentery."

Some of our modern writers have diſputed with the ancients, reſpecting the propriety of deſcribing the dyſentery, with an ulceration of the bowels, becauſe on ulceration is not a primary ſymptom, nor neceſſary to conſtitute a dyſentery; being, as ALEXANDER of TRALLES obſerves, rather the effect than the cauſe of the diſeaſe.

But theſe diſcriminations are as uſeleſs as the various diviſions into which thoſe moderns have marſhalled different ſorts of dyſenteries; as the acute, chronic, bilious, malignant, putrid, benign, red, white, brown, grey, &c. which diſtinctions, in fact, are only applicable to the various appearances of the ſame diſeaſe, as influenced by climate, ſeaſon, conſtitution; to different ſtages and degrees of it; and to ſuch caſes where ſome other diſorder, or epidemic, is united with it.

HIPPOCRATES himſelf, it is certain, makes uſe of the epithet ἐρυθρα, red, *in Morb. Vulg. Lib. II.* and in other places; but he uſes the word Δυσεντερια every where, in a general ſenſe, as

as well as GALEN, distinguishing this disease from the Διαρροια, *Alvi Profluvium*, or Diarrhœa; and from the Λειεντερια, *Levitas Intestinorum*, or Lientery.

The *Diarrhœa* is described by ARETÆUS to be a flux of liquid and unconcocted aliment *; and by GALEN to be a plentiful flux of the belly, without any inflammation or exulceration of the intestines †. The *Lientery* is a disease, according to HIPPOCRATES and GALEN, wherein the food passes through the body, unchanged, uncorrupted, liquid, and without pain; and the body is wasted. *De Affectionibus, lib. cap.* 7. *& Aphor.* HIPP. *Comment. VI. Sect.* 1.

SYDENHAM, in treating of the epidemical dysentery in London, of 1669, 1670, 1671, and 1672, uses the word in so general a sense, that he has been attacked by some observers of trifles, for saying, at the setting-in of the dysentery in the first autumn, several had no stools at all, "*quamplurimi nullis omnino dejectionibus molestabantur.*" P 182.

HIPPOCRATES speaks of the disease where the patients were not much afflicted with pain;

* Cap. 7. de Sig. et Caus. Diut. Morb. Lib. II.

† Definit on. Medic.

Lib. III. Text 54. *Epidemiorum.* δυσεντεριωδεες ου δ' ουτοι λιην επιπονως: and SYDENHAM ſays, that the epidemical conſtitution declining, the gripes were ſcarcely felt; "*Tormina vix percipere-*" "*tur.*" P. 182.

Having premiſed thus much concerning the definition of the diſeaſe of which I am treating, and of which farther and ample deſcriptions may bé found, by referring to ARETÆUS, AETIUS, CÆLIUS AURELIANUS, and ALEXANDER *of* TRALLES, I ſhall proceed to the firſt article for therapeutical conſideration.

The immediate cauſes of all diſeaſes, well underſtood and properly conſidered, point to their cure. It was an obſervation of the illuſtrious SYDENHAM, that poſſeſſing this knowledge, and a correct hiſtory of a diſeaſe, he never was at a loſs to preſcribe a ſuitable remedy for it; and that he always proceeded with caution, until theſe circumſtances were aſcertained.

The diſorder in queſtion has been, I believe, more conſidered from its effects, remote, and concurring cauſes, than from its *immediate* cauſe; hence we may account for the inefficacy of the various attempts to cure it.

The

The pen of writers has done little more in the dyſentery, than record the times and places when and where it proved moſt fatal; the appearance it put on; its ſymptoms; its devaſtation; variety of modes of treatment, that had no certain ſucceſs; now and then a remarkable caſe; and the phænomena diſcovered on diſſecting the dead *.

The great author above-mentioned, following nature as an unerring guide, never ſtopped at effects, neither did he bewilder himſelf in the ſearch of thoſe cauſes of diſeaſes, that are not cognizable by our ſenſes, but proceeded on to ſuch as are immediate, or conjunct, and obſerved and aſſiſted the means employed by nature to relieve herſelf ſtruggling under the oppreſſion of diſeaſe; or ſubſtituted a ſafer and

* The various appearances of the inteſtines after death from this diſeaſe, have been deſcribed by a multitude of writers; and many of their deſcriptions collected together by BONETUS, and may be ſeen in his admirable work, the *Sepulchretum*, *Lib. III. Sect.* 11. But as diſſections of this ſort lead to nothing towards the cure of the dyſentery, and as the appearance of the inteſtines varies according to the habit of the patient, and the duration of the diſeaſe, I have ſuppreſſed an account of many diſſections I have made, as demonſtrative only of its effects, which are ſufficiently known to all practitioners.

better method, when hers was dangerous or ineffectual. To this principle the world is indebted for that ineſtimable work, which can only periſh with it; a work founded on a baſis applicable to all climes; that ſtands as the PALLADIUM of phyſic againſt the ſuperſtitious errors of the middle ages, and the ingenious chimeras of later times.

He diſcovered the Dyſentery to be a fever of the ſeaſon or, *of its own kind, turned inwards upon the inteſtines*, "*Febrem eum eſſe ſui ſcilicet generis, in inteſtina introverſam.*" P. 182. And yet his ſucceſſors have made but little farther uſe of this excellent aphoriſm than quoting it, as their rules laid down for treating the diſeaſe ſufficiently prove.

In the courſe of my experience in the Weſt-Indies, and from every account I have been able to procure in that part of the world, I have invariably found the truth of SYDENHAM's opinion; and have remarked, that as the flux conforms by the number of ſtools, and by its rapidity, to the degree, ſo it does to the ſtate of the fever, of the ſeaſon, when it prevails; the ſtools being more frequent, and all ſymptoms more aggravated, at thoſe hours when

when the current fevers are in their exacerbation, and the reverſe when thoſe fevers are in their remiſſion; beſides, the alternate ſucceſſion of one diſeaſe to another, I have frequently obſerved. Nor can it be doubted that this *Fever of the Inteſtines*, like moſt others, is cauſed by *obſtructed perſpiration*; not confined to cold, hot, wet, or dry ſeaſons; particular food, water, liquors, or fruit: but chiefly depending on ſome ſecret influence in the atmoſphere, or on ſudden tranſitions of the air, and ſuch other cauſes as expoſe people to have perſpiration haſtily ſtopped.

I know that writers have written very learnedly on remote, pre-diſpoſing, and proximate cauſes; and lay great ſtreſs on heat and moiſture, putrid ferments, infection, &c. &c. But upon a ſtrict examination, we ſhall find that there has been too much attention employed on theſe vague, uncertain, and never-to-be-defined circumſtances; while the *immediate cauſe*, or *primum mobile*, has eſcaped unnoticed.

Epidemical diſeaſes can have but one general and immediate cauſe; for what pre-diſpoſing cauſe can exiſt, where every diverſity of habit of body, and age, is ſubject to the ſame

ſymptoms, and cured by the ſame remedies? It is not to be doubted that a conjunct cauſe is neceſſary, by which one part becomes affected and not another; otherwiſe obſtructed perſpiration, the parent of ſo many, would always produce the ſame diſeaſe.

Though I believe that epidemical dyſenteries have but one univerſal and common cauſe, and may be removed by one univerſal and common remedy, yet I do not contend that a particular diſeaſe may not be created by a particular cauſe, and be cured by a particular medicine. Accidental *ſtimuli* in the bowels have often cauſed this diſeaſe, and a little rhubarb and laudanum have often cured it.

It is ſaid by *Cuſpinianus*, that the emperor *Theophilus* died of a dyſentery, which was cauſed by drinking a large draught of very cold water. *Fabricius Hildanus* mentions a perſon to whom the eating of muſhrooms had almoſt proved fatal by the ſame diſeaſe *. *Ælian* ſays, that *Tachos*, an Egyptian, a remarkably healthy man in his own country, loſt his life by a dyſentery in Perſia, which he

* De Dyſenter. Cap. 10.

brought

brought on by changing from his accuſtomed diet, to that of the luxurious Perſians *. *Amatus Luſitanus* ſays, the people in India and Egypt have dyſenteries, from eating the fleſh of animals that feed on *Caſſia Fiſtula* †.—I have frequently known dyſenteries cauſed by eating immoderately of ſuch fruit as pine-apples and oranges, among people newly arrived in the *Weſt-Indies*; and in *Paris* from drinking the water of the *Seine*; and from a change of water in many countries. But the cauſe of epidemical diſeaſes is no more to be conſidered from particular caſes, than the natural life of man is to be eſtimated, by the age of thoſe that fall by caſualty, or periſh by untimely death.

The conſequence of obſtructed perſpiration, from whatever cauſe, is either great inflammation, or great debility; and a plethora in the body, of much greater extent than what can be cauſed by the loſs of a limb, or the ſuppreſſion of the menſes, or a bleeding at the noſe: and yet HIPPOCRATES and GALEN aſſign theſe, which many other writers and frequent obſervations confirm, to be ſufficient cauſes to produce a rupture of veſſels, in other parts of the body.

* Lib. V. Cap. 1. Var. Hiſtor.

† Cent. II. Curat. 45. in Scholia.

By

By what conjunct cauſe this plethora, from obſtructed perſpiration, ſhould be directed to the inteſtines, and not to the lungs, I do not know. If this conjunct cauſe be only ſome latent matter in the bowels, how comes it, that in camps, where the officers and men often uſe a totally different diet, and are in many reſpects under different circumſtances, and in cities, where infants, adults, old people, and thoſe of every deſcription, and mode of life, fall indiſcriminately in an epidemical ſeaſon?

The great outlet for perſpiration being the ſkin, it muſt ever be ſubject to variation in quantity from the viciſſitudes of the air. In the temperate clime of Italy, it appears by SANCTORIUS* that perſpiration amounts to five-eighths of what is taken into the body; we cannot, therefore, be ſurpriſed at the violent efforts nature immediately makes, on the ſudden ſuppreſſion of an habit of ſuch extent: and if we attend to the ſtools of ſome patients, after the common contents of the bowels are diſcharged, before the blood-veſſels are broken, and at intervals when there is no mixture of

* *Sanctorius* ſays, fifty ounces of perſpiration is diſcharged from a man in a day in Italy. *Kiel* computes that thirty-three ounces is the mean quantity in England.

blood,

blood, or mucus, we ſhall find they are nothing but a ſerous, acrid fluid, ſecerned from the blood.

As I have conſtantly practiſed in the opinion that an epidemical dyſentery is a *Fever of the Inteſtines*, and that this fever is univerſally cauſed by the *obſtructed perſpiration* being determined there; ſo I have univerſally found it relieved by turning back that diſcharge to its natural channel: nor have I often found difficulty in removing it ſpeedily, when taken in the beginning of the diſeaſe.

The common and fatal practice of attacking the diſorder in the bowels, with opiates and aſtringents, is but aggravating the effect (which at firſt is irritation, and diſtention of the meſaraic veſſels), while the cauſe is intirely neglected.

Among the multitude of *formulæ* propoſed, we find *Snake-root*, *Dover's Powder*, and other diaphoretic medicines; but exhibited in ſuch a manner that they muſt often have produced more harm than good: however, it plainly demonſtrates that the ſkin has not been really looked to for relief, much leſs has the proceſs of

of SWEATING been conſidered as the only one to be relied on.

Some phyſicians recommend *Ipecacuanha* in ſmall doſes, united with *Philonium*, or *Opium*: others a courſe of *Ipecacuanha* in ſtages of the diſeaſe, when the inflammatory ſymptoms are over. The good effects from *Ipecacuanha* are attributed, ſometimes to its anti-ſpaſmodic power; ſometimes to its purging, and ſometimes to its aſtringent quality. But with deference to theſe opinions, which have been numerous, I believe with FREIND, that *Ipecacuanha* increaſes the tendency of the humours to the ſkin; and therein conſiſts its uſe in fluxes *.

I apprehend that no aſtringent medicines, ſimply as ſuch, will often be found proper in fluxes: this is daily evinced by gangrenes, obſtinate obſtructions, abſceſſes, dropſies or ſwellings, which ariſe when a flux has been injudi-

* Radix Ipecacuanhæ præter vim vomitariam, quam obtinet, uberrimum ſudorem excitare ſolet. Atque in hoc, quantum ego conjectura aſſequi poſſum præcipue conſiſtit egregie, illa in Dyſentericis affectibus virtus, quam ſibi præ aliis vomendi inſtrumentis vindicat.

FREIND *Comment. de Febr.* p. 40.

ciouſly

ciouſly ſtopped by them *. A Dyſentery being, in its firſt ſtages, "*a Fever of the Inteſtines*," and in every ſtage, as far as relates to the excretions, an increaſe of one diſcharge from the diminution of another; which cannot be effectually remedied, but by reſtoring the functions of the body to their natural order and equilibrium.

SENAC gave *Emetic Tartar* in ſmall doſes; but he expreſsly ſays, he gave it as a *laxative* to keep up a free paſſage from the ſtomach to the rectum. It is a common practice to give the *Glaſs*, and other preparations of *Antimony*, in caſual doſes, and uncertain periods; but the operation is always intended for the firſt paſſages. In this practice, though the *primæ viæ* are ſo neceſſary to be cleanſed, I attribute the principal ſucceſs to the effects antimonials produce, in opening the obſtructed capillaries, and preventing a reflux of humours to the bowels; for often in fluxes, when from careleſsneſs and cold, antimonials have had their

* HIPPOCRAT. Prœnot. Sect. 2. "Intempeſtivè ſuppreſſa Inteſtinorum Difficultas, abſceſſum in coſtis, aut in viſceribus, aut articulis inducit." And GALEN de Ven. Sect. adverſus ERASISTRAT. Cap. 6. ſays, "Melancholia, Inſania, Pleuritis, Dolor Renum, Sanguinis Vomitus, Epilepſia, Hydrops, oriri poſſunt."

whole

whole force and action turned upon the bowels, they have increaſed the determination of the fluids there, and brought on ſudden death.

The activity of emetic tartar makes the direction of it difficult; it is in many reſpects a dangerous medicine, in hot climates, the nervous ſyſtem there being ſo irritable,—excepting merely as an emetic. It has done much miſchief when employed as a diaphoretic in fevers and fluxes. The reguline virulence of the antimony being combined with acid, makes its operation, as a ſudorific, very precarious; and it often proves fatal to the ſtomach.

Such preparations of antimony, as *James's Powder*, that have, what has been termed the phlogiſton of the mineral, mitigated, and the reguline part capable of action, from acidity, are beſt in theſe diſeaſes, being more certainly ſudorific; their operation in the ſtomach and bowels conſiderably depends on the ſtate of the humours contained there; and they principally become active when nature requires it.

It has been ſuppoſed that the doſes of theſe preparations of antimony cannot be ſo well aſcertained as its ſolution by the vegetable acid; for which reaſon emetic tartar has been pre-

preferred for uſe. It muſt be admitted that emetic tartar is a certain vomit, and when given for that purpoſe, the doſe is eaſily aſcertained; but as it acts immediately on the ſtomach, it is frequently impoſſible to produce any other effects by it, in whatever doſe adminiſtered. A very reſpectable phyſician, at the head of a medical ſeminary*, has greatly contributed to the general uſe of emetic tartar, and much abuſe of it has ariſen in hot climates, from reſpect to his authority and character.

It has been ſuppoſed alſo by the ſame profeſſor, that the application of cold air, as a ſedative, by abating the re-action of the vaſcular ſyſtem, may be uſeful in ſome circumſtances of fever; but he does not venture to pronounce in what. This dangerous conjecture too we have ſeen followed, by the extravagant cuſtom of expoſing patients indiſcriminately in fevers and fluxes, almoſt *ſub dio*, and the miſchief it produced diſregarded.

A moderately cool, temperate air, is proper and neceſſary in every ſpecies of fever; but if any thing beyond that degree is meant, it cannot be ſupported by any reaſoning that ap-

* Dr. CULLEN.

plies

plies to the ſmall-pox; though this gave riſe to the ſpeculation, and many experiments on it, in the ſouthern parts of Europe.

The ſmall-pox fever is *ſui generis*, and terminates in phlegmons; it requires a treatment of its own; for example, cooler air than is required in a ſtate of health is neceſſary; raiſing a ſweat is prejudicial, and often changes the diſtinct into the confluent ſort. On the contrary, in fevers, their ſolution is commonly by ſweat: cold air applied, as in the ſmall-pox, impedes that ſolution, and changes an intermittent into a remittent, or both into a continued fever.

The preceding paragraph will not be deemed digreſſive, as it is neceſſary to elucidate my ſubject.

It is not my intention to diſpute the auxiliary aid, that may occaſionally be drawn from various purgatives, and even from various aſtringents, in certain conditions of a dyſentery, diarrhœa, or teneſmus; or from rhubarb, abſorbents, and correctors, in unimportant complaints of the bowels, originating there, from acrimony and crudities; but to recommend a practice for removing epidemical

dyſenteries, by means adequate to, and that correſpond with, their general cauſe.

It will occur to every practitioner (as my intention here is the uſe of SUDORIFICS) that I mean *a careful, continued courſe of them, to keep up a* SWEAT *in extent proportioned to the violence of the diſeaſe*; and not the trifling way of giving them in ſmall doſes, whilſt the patient is expoſed, and their operation neglected. It will occur alſo, that *the ſudorific employed muſt be ſuitable to the nature of the flux*; *the ſtage of it*; *and the habit of the patient.*

When I propoſe a method for the cure of this diſeaſe by a courſe of ſudorifics, I am aware of no objection that can poſſibly attend the novelty of the doctrine; excepting that it wants the ſanction of the fathers of phyſic, and has to oppoſe the errors and prejudices of cuſtom. But facts muſt ſupport it, where this diſeaſe is moſt formidable, from the important conſideration that ſucceſs in war, the ſafety of poſſeſſions, and the protection of commerce, depend on the preſervation of ſoldiers and ſailors; among whom the flux has ever been found to make the moſt dreadful havock in the Eaſt and Weſt-Indies, and on all ſervice in hot climates.

Though I have had a ſucceſſion of opportunities in my private practice, ſince the year 1768, to prove the extent of the doctrine I advance ; I have alſo had many opportunities to prove its efficacy, in that degree of dyſentery, which is no where to be ſeen but in military camps and garriſons : for which reaſon I ſhall illuſtrate the ſubject with a ſhort account of the bloody-flux, as it raged among the troops in Jamaica, in April, 1780, and particularly in the camp at *Caſtile Fort*, with the method that I followed in the treatment.

This flux will appear to want almoſt all the uſually-conceived remote cauſes of a dyſentery; but it will be found, with the immediate one, common to all.

The ſtate of the human frame for ſome time prior to the above period, underwent a multitude of diurnal tranſitions, from the abſence, or preſence of a violent ſea-breeze : the weather was now remarkably dry, hot for the ſeaſon of the year, and at times ſultry. It was impoſſible to uſe the leaſt exerciſe without being heated ; and it was almoſt impoſſible to get heated,

heated, without being immediately chilled by the breeze *.

It is the ſoldier's life to be much expoſed, and it is his cuſtom to be careleſs of himſelf: when he is fatigued, or heated, he haſtens to cool himſelf in the breeze, or night air, and perhaps throws off his clothes, and often lies down and ſleeps in that condition. If he is wet, he dries his clothes, linen, and ſkin together. By theſe means, perſpiration, the great fountain of health in hot climates, is ſuddenly ſtopped, and febrile ſtrictures occupy the whole ſurface of the body.

A *Flux* following theſe *data*, muſt diſtinguiſh itſelf by an inflammatory diatheſis; and its progreſs will conſequently be rapid.

The general ſymptoms were a chilneſs in the beginning, ſucceeded by feveriſh heats; gripings, and frequent ſmall motions; ſickneſs of the ſtomach, and ſometimes retchings; copious purging ſoon followed, with green, brown, or yellow watery ſtools; theſe were

* When the breeze is violent, and what is called *fiery*, it checks perſpiration, when people are expoſed to it, in an inactive ſituation; making the ſkin dry and parched, and cauſing a feveriſh tendency.

now mixed with, or ſucceeded by great diſcharges of blood; ſeveral ounces of pure arterial blood were voided in a ſtream, every half hour, or hour; and ſome patients bled to death in this manner. The ſtools varied in fætor, and appearance, according to the periods of the diſeaſe, and as they were more or leſs retained. A conſiderable degree of fever brought on the diſeaſe, and accompanied it with ſome; with others but little. Small, bloody, ſlimy ſtools continually harraſſed the patient in the laſt ſtages, particularly at nights. The tongue was greatly furred, and ſometimes of a brown, or black colour. Apthæ appeared but ſeldom. This is the general account of thoſe who experienced the violence of the diſeaſe, and ſurvived the firſt week; but many who were ſeized at the ſetting in of the flux that ſpring, periſhed in three or four days.

The curative indications are to cleanſe the inteſtines, and to cauſe a revulſion to the ſurface of the body. When the diſeaſe is rapid, the cure depends on performing theſe things as ſpeedily as poſſible.

Experience having ſhewn that the common methods and medicines, hitherto uſed, fall far ſhort, in violent dyſenteries, of obtaining

taining the important point of revulſion, in proper time, and ſupporting it; the practice will ſtill be deficient, if we cannot find means adequate to theſe purpoſes.

The inductive conſiderations are, to bleed whenever it can be done with ſafety; to cleanſe the *primæ viæ*; to check the impetus with which the circulation is determined on the inteſtines, diſtending and burſting the coats of the diſtributing branches of the meſenteric arteries; to remove the ſpaſm from the veſſels of the ſurface of the body, and to cauſe a diverſion there:—all theſe muſt be done immediately, that the revulſion may be effectual.

Bleeding being an operation of great conſequence in the flux, the cure is generally begun with it, repeating it as the ſymptoms authoriſe. There are but few inſtances where it may not ſafely be done in the beginning of the diſeaſe; obſerving only, "*non quæ ætas ſit, ſed quæ vires ſint* *." The neceſſity is obvious, where the patient is plethoric, with much fever, full pulſe, and ſevere pains.

After bleeding, a vomit of *Ipecacuanha* is to be given; which commonly relieves the ſto-

* Cels. Lib. II. Cap. 10.

mach from a load of acid, poraceous, bilious impurities. But our great expectation from vomiting is, that its action on the muſcular fibres of the ſtomach, forces open the extreme arterial capillaries, forwards the circulation to the ſurface of the body, and induces to ſweat. This, the invariable effect of vomits, has not been noticed by the ancients; and has never been by the moderns applied to the end I propoſe in the cure of inteſtinal diſeaſes. An opiate, after its operation is neceſſary.

After the vomit and opiate, it is proper to empty the bowels, but with caution, in caſe the patient be weak; and in ſuch a manner, as not to increaſe the determination of the blood there, and divert it from the ſurface; for then we ſhould loſe the ground gained by the vomit, and counteract our principal deſign. An antimonial that acts much upon the ſkin, and purges at the ſame time, is what I always uſe.

The *primæ viæ* being cleanſed, and the revulſion begun, it muſt be ſupported by ſudorifics, that the diſeaſe may be thrown off by ſweat: this will be effected by uniting an opiate with a diaphoretic, and adminiſtering it as occaſion requires. Laudanum and antimonial wine

wine combined, is a medicine that cauſes little or no irritation, and is a pleaſant and certain diaphoretic. It is generally neceſſary in the flux, when a ſweat is intended by antimonial, or other emetic medicines, in ſmall doſes, to add laudanum, to take off their irritation; by which means their doſes and effects may be greatly extended.

James's Powder is admirably calculated to anſwer the firſt intentions in this diſeaſe: it poſſeſſes this great advantage, that though it ſhall effectually cleanſe the *primæ viæ*, properly given, it never fails to excite a plentiful ſweat, and its effects terminate on the ſkin. This double operation, if I may ſo call it, perhaps has made it ſo deciſive in obſtinate fevers.

When the diaphoreſis is begun, I cover my patient, if a ſoldier, with a blanket (which no ſoldier ſhould be without), and take care that the wind is not admitted directly upon him. I do not ſuffer him to uncover himſelf, but order whatever he wants to be brought to him, and ſupply him copiouſly with warm barley-water, mint, ſage, balm, or oatmeal tea; and now and then give him a baſon of gruel, or thin flour pap, with a ſpoonful or two of good, ſound white wine in it, as free as poſſible from acidity.

When the ſudorific proceſs has been ſucceſsfully continued, all the ſymptoms grow milder; and if the patient break out in a raſh, or efflorescent eruptions, or boils, the diſeaſe will ſoon be removed.

Should it be objected, that uncovering and expoſing the patient while ſweating, when he riſes to go to ſtool, is an inconveniency which militates againſt my doctrine; I anſwer, that where there are proper attendants and utenſils, the patient need not be expoſed, nor move from his bed; and that when once a complete and univerſal ſweat is raiſed, the neceſſity for expoſing the patient at all, will ſoon be at an end, as the diſeaſe ſometimes ſuddenly diſappears.

In the Weſt-Indies, in the preſence of ſeveral of the officers of different regiments, who were deſirous to be ſpectators of a fact ſo intereſting to the army, a ſoldier has been taken in the worſt condition of the diſeaſe, with blood running from him, as in an hæmorrhage from a wound, and in the utmoſt agony; I have given him three grains of the common *Glaſs of Antimony*, finely prepared, and made into a ſmall pill; this perhaps has operated upwards

upwards and downwards; but in promoting its operation to the ſkin, thoſe other operations ceaſed, and a violent ſweat has enſued; which was kept up by warm herb teas, and now and then ſmall doſes of laudanum, which may always be given with ſafety, and without any of its uſual inconveniencies, while the patient is ſweating, which is a fact worthy the attention of practitioners: even the firſt ſtool, after the ſweating has been raiſed, has been leſs bloody, and the third, or fourth, frequently ſcarcely tinged.—Such is the power of REVULSION.

If the flux continue obſtinate, and the ſweats do not go on kindly, it will not only be requiſite to carry off the morbific humours by a doſe of the antimonial purgative, but repeated vomits of *Ipecacuanha* are to be given. In this caſe the circulation has not been enough diverted from the inteſtines, to produce a full and ſufficient diaphoreſis; it is therefore neceſſary to give a freſh impulſe to the fibres, by the action of vomiting: for in vomiting, the action of the ſtomach, and the contraction of the abdominal viſcera, force the blood to the ſurface, and upper parts of the body.

Another cauſe of obſtinacy in the flux, is indurated fæces, lodged in the inteſtines; and though

though the patient ſhall have been repeatedly purged, and taken nothing but fluids during his illneſs, it is amazing what *ſcybala*, or lumps of excrement, will ſometimes be brought away, by a repetition of the antimonial purgative, after an interval of ſeveral days: for which reaſon, when the ſweats have been plentiful, the pulſe moderate, and the flux ſtill continues, we may ſuſpect this to be the caſe.—The extraordinary appearance theſe balls of excrement ſometimes acquire from a long retention among the diſeaſed ſecretions, has induced ſome writers to whimſical ſuppoſitions concerning their cauſe, and component principles,

PRINGLE ſays, he does not know whether thoſe lumps, which have the appearance of *ſuet*, are the ſame which HIPPOCRATES calls σαρκες, *carunculæ*.

Certainly they are not: for the σαρκες of HIPPOCRATES (Σαρξ, *Caro*), are thoſe excretions that *Celſus* calls "*Carnoſa*." GALEN ſays, they are the muſcular ſubſtance of the inteſtines. CARDANUS ſays, that they are "*a meſenterio et vicinis partibus eroſis inteſtinis*." And commentators in general ſay, that they are "*ſecunda inteſtinorum tunica*." Beſides,

HIP-

HIPPOCRATES ſays, that the σαρκες are a fatal ſymptom : ὁκοιαι ἂν σαρκες ὑποχωρησωσι θανασιμον *. However, BRASSAVOLA, in his comment on this paſſage, ſays he has cured patients who have voided them.

The *Corpora pinguia* are concretions by no means fatal, nor uncommon in the Dyſentery, though the *Carunculæ* certainly are, notwithſtanding what BRASSAVOLA aſſerts ; for as FORESTUS ſays, "—ita ut quædam *Corpora pin-* " *guia* duntaxat excernantur, facile curari " poterit,—ita ut veluti *Carunculæ*, hoc eſt, " magnæ inteſtinorum partes excernantur, lethalis eſt talis dyſenteria." Lib. XXII. Obſ. 33. Scholia.

The *Corpora pinguia* have been always properly diſtinguiſhed by every writer of experience and correctneſs, from the *Carunculæ*, *Strigmenta*, and *Ramenta*.

PRINGLE has fallen into the ſame error reſpecting the *caſeous*, or cheeſy ſubſtances, frequently found in the ſtools of dyſenteric people ; ſuppoſing it actually cheeſe eaten by the patient. PLATERUS makes the ſame miſtake reſpecting the pinguious ſubſtances.

* Aphor. 26. Sect. IV.

I pur-

I purſue the method I have related, regulating it as occaſion may require, or particular occurrences ſuggeſt, until the patient is in a condition for bark, and other tonics and corroborants.

The flux will continue troubleſome in ſome ſubjects from mere weakneſs, and relaxation of the veſſels, without any material gripings, or feveriſh ſymptoms; here I never heſitate to give bark, with ſnake-root and wine.

In all complaints of the bowels, particularly in the dyſentery, bark ſhould never be given in ſubſtance; it cauſes irritations and gripings; and either brings back the diſeaſe, or fills the patient with obſtructions: a ſtrong decoction, therefore, is ever to be preferred.

As the flux is always increaſed at the approach of night, ſo for ſome time after it has abated the pulſe quickens, and the patient grows feveriſh in the evening: this is an admonition that we ſhould deſiſt from bark, and give a gentle diaphoretic at nights.

The remaining acrimony which ſometimes keeps up a ſmall irritation, after every other ſymptom

tom is removed, may be corrected with abſorbents, and carried off before the uſe of bark, or at any ſubſequent period if it ſhould recur, with rhubarb and magneſia, or any mild cathartic.

During the convaleſcent ſtate of thoſe who have been much reduced, and to prevent a relapſe, a flannel ſhirt, or jacket, worn next the ſkin, is very beneficial. When the bowels have ſuffered conſiderably by the flux, and cannot recover their tone, but from weakneſs are ſubject to returns of the diſeaſe, or to diarrhœa or teneſmus, on the leaſt expoſure to cold, a flannel jacket next the ſkin, will be found almoſt a certain remedy and preventive.

It is to be obſerved, when the attack is ſudden and violent, it is often neceſſary to overtake the diſeaſe with opiates, and cordials, before any recourſe to pathological reaſoning is to be adopted; otherwiſe the patient may be exhauſted and ſunk, beyond the recovery of medicine.

Here I cannot help expreſſing my concern, that the aggravated ſymptoms which return in the morning, have not put an end to the cuſtom in the army and navy practice, of giving large

large doſes of *Opium* at night. When opium is given alone, and continued for any time, after its cordial effects are over, it weakens the veſſels, injures the nerves, cauſes either a ſtrangury, or a paralyſis of the bladder, and lowers the powers of life: the humours, inſtead of being diſſipated, accumulate in the diſeaſed parts, that when the conſtipation it has created is off, the blood ruſhes forth with increaſed violence, and accelerates the patient's end.

DEGNER ſays, with many of his patients there was an entire ſuppreſſion of urine, for ſix, eight, ten, or fourteen days*. Several writers mention ſuppreſſion of urine among the ſymptoms of this diſeaſe; but as I have never ſeen any thing like it occur, where opiates, or aſtringents, had not been improperly uſed, I conſider it rather as a ſymptom of miſmanagement, than of the diſeaſe. From opium I have often obſerved this effect: and have ſpeedily removed it by increaſing perſpiration, and giving a cup of ſtrong, clear, good COFFEE, every few hours.

In the beginning of the diſeaſe, the inteſtines are in a ſtate of inflammation; and in

* In his Hiſtory of the Dyſentery, at *Nimeguen*, in 1736, page 18.

the

the farther advanced ſtate of it, we find the meſenteric veſſels and glands enlarged and obſtructed; the inteſtines thickened, their coats tumified, relaxed, abraded, and haſtening into a ſtate of ulceration, or ſphacelation. *Opium*, in theſe ſituations (beyond which the diſeaſe is never curable), muſt increaſe and multiply every evil.

The real uſe of opium is to arreſt the hurry of the diſeaſe; to procure time to put ſome rational method of cure into execution; to take off the irritating property of other medicines, and to give them their intended effect, and to eaſe thoſe *tormina* which are ſometimes intolerable. Here the matchleſs power of opium raiſes our admiration.

In the preceding hiſtory it will appear, that the flux is not confined to particular ſeaſons and ſituations; that what have been commonly conſidered as remote cauſes, only give the type to the diſeaſe; and that its general cauſe, producible various ways, is *obſtructed perſpiration*.

The flux that prevailed in Jamaica, in the autumn of the year 1779, was attended with many of thoſe cauſes, that are called remote.

Auguſt,

Auguſt, September, October, and the beginning of November, were unuſually cloſe and ſultry, with frequent rains; the great diſcharge of perſpiration from the rarefaction of the blood, in ſuch a ſeaſon, relaxes the extremities of the perſpiratory veſſels, and ſubjects them to ſudden ſpaſm and collapſion.

The camp dyſentery, in low, damp, marſhy countries in Europe, in the autumnal ſeaſon, has all the concomitants, and type of a flux in hot climates, after heavy rains *.

There will be leſs diſpoſition to inflammation, and the fluids will tend more to a ſtate of diſſolution;—yet it is *a Fever turned upon the Inteſtines*, for want of a free and regular perſpiration, from the thickneſs and moiſture of the atmoſphere.

The irritation thus produced on the bowels, ſoon cauſes a violent determination of blood; and as the circulation is diminiſhed in the veſſels of the ſurface of the body, it is increaſed in thoſe of the inteſtines.

* The *King of Pruſſia* and the *Duke of Brunſwick* have witneſſed this melancholy truth in conſequence of the wet ground which their troops occupied during the two laſt months, in *Champagne*. November 1792.

By

By this increaſed action of the arteries, the progreſs of the blood is impeded in the minute ramifications of the veſſels; hence extravaſation and hæmorrhage; an immediate revulſion is therefore neceſſary; it muſt be extenſive, but ſuitable, that there may be no miſchief done, by increaſing the debility incident to the diſeaſe.

Bleeding cannot be performed on every ſubject, nor in every ſtage, nor condition of a flux; cathartics only cleanſe the affected parts; emetics are limited to anſwer particular purpoſes; diaphoretics have never been uſed in a manner nor extent ſufficient to produce an effect: and the cuſtom of expoſing patients to partial currents of cold air, in hot climates, prevents nature from doing any thing towards the cure.

The type of the diſeaſe being duly attended to, will indicate the quantity and nature of the evacuations neceſſary to facilitate revulſion; and it is ſafely and effectually completed, by a careful, continued courſe of SUDORIFICS, and dilution, carried on in extent proportioned to the diſeaſe.

Thus have I communicated what I conceive to be the general cauſe of the DYSENTERY, and explained the method I have followed in its cure. I have avoided the detail of minute deſcriptions, circumſtances, particular caſes, and diſſections, as not coming within my deſign; which is, to explain my method of cure, applicable to the cauſe I have aſſigned of this diſeaſe, and compriſed in the following conſiderations; that the dyſentery is a *Fever of the Inteſtines*; that the cauſe is *obſtructed perſpiration*; and that the cure conſiſts in turning back the circulation to the ſurface of the body, and increaſing the ſenſible perſpiration by the moſt active SUDORIFICS.

Induced by motives not to be reſiſted, I have ventured on the public, without the advantages of leiſure and retirement; and as I have nothing to expect from the ornaments of diction, and compoſition, I have placed my *ſpes et ſolatia* in the rectitude of my intentions. The judicious and candid will judge of them, and determine how far an attempt to make ſome return for the benefits which we receive from ſociety, is laudable, when it contributes to mitigate one of the great calamities of mankind.

*** Moſt of the preceding part of this Treatiſe, has been ſeveral times publiſhed, in a ſeparate tract, under the title of OBSERVATIONS *on the* DYSENTERY *of the* WEST-INDIES, *with a new and ſucceſsful Method of treating it.*

ON THE

DYSENTERY.

PART THE SECOND.

THE dyſentery that raged with ſo much violence in the ſpring of the year 1780, in Jamaica, was the principal epidemic which the ſeaſon produced, among adults; but there was a malignant ulcerated ſore throat, that ſeized children and very young people, and proved fatal to almoſt every infant that was attacked with it. This diſeaſe, which was the occaſion of mourning to moſt of the families in the town of Kingſton, was attended with very little fever, fætor, or pain; for it ſometimes was not diſcovered by the parents, or nurſes of children, until a few hours before their death. It was frequently unobſerved until the whole throat, fauces, and palate, were intirely rotten. Some who recovered loſt their

uvula, and part of their palate. Some had their ſpeech and articulation afterwards conſiderably affected by it. The diſorder made its firſt appearance in April, and continued through the remainder of the year, but gradually abated. In Auguſt, ſome children who had eſcaped the ſore throat, broke out with very large boils. In September the ſore throat attacked adults, but in them it yielded to purging medicines, gargles, and bark.

I uſed gargles made of decoction of bark and mel egyptiacum, in general practice; and from their efficacy, I lamented that the mel egyptiacum could not be uſed with ſafety for children. However, I found a ſolution of white vitriol and roch alum, a very good detergent, and almoſt never-failing remedy to cleanſe their fauces with; and if a little of it was ſwallowed, it had always a good effect, by cauſing a ſmall degree of retching, by which the ſtomach and throat were cleanſed of mucus and ſloughs, and great relief was obtained.

As diſeaſes in hot climates in general are ſuppoſed to owe their origin to accidental, or incidental moiſture, added to heat; and that thoſe ſeaſons which are moſt diſtinguiſhed for the quantity of rain, are moſt diſtinguiſhed for the

the quantity of diſeaſes; it may be proper to remark, that epidemics frequently appear there, without the co-operation of any known cauſe whatever; and that neither the ſore throat, nor the ſpring dyſentery, were produced by wet weather, as will appear from what follows; which will alſo ſerve to give a general idea of the climate at and near Kingſton: where the heat is on an average at nearly 83 degrees of *Fahrenheit's*, or 22½ of *Reaumur's* thermometer, through the year.

1780, *January*. Two days rain in this month. Cold north winds four days in the beginning of the month. Land winds at nights. Very little ſea-breeze in the middle of the days, and ſometimes hot; but in general cool, and very healthful. On the ſeventh of this month, at ten minutes after eight o'clock in the morning, a ſevere earthquake happened. Its direction was from S. E. to N. W. About ten minutes after the ſhock, there was a ſmall undulation of the earth; and at ten minutes after ten another undulating tremor.[1]

[1] There was no rain in this month in 1779—In 1781 three days.

February. Five days rain; three ſucceſſively. A ſtrong ſea-breeze day and night, in the middle of the month, and ſultry weather. Very cold, day and night, during the rains on the 22d and 23d. Land wind at nights[2].

March. No rain this month. Mornings and evenings cool. Middle of the days hot. A ſtrong ſea-breeze in the days, and land wind at nights.[3]

April. One day rain. Violent ſea-breeze, guſty and turbulent.[4]

May. Four days moderate rain. Sea-breeze violent.[5]

June. Twelve days rain; three at one time, and ſeven at another ſucceſſively. Strong ſea-breeze.[6]

[2] There was no rain in this month in 1779—In 1781 none.

[3] There was no rain in this month in 1779—In 1781 three days.

[4] It rained three days in this month in 1779—In 1781 five days.

[5] It rained ſix days and nights ſucceſſively in this month in 1779—In 1781 ſix days, at intervals.

[6] It rained three days ſucceſſively in this month in 1779—In 1781 eleven days, at different times.

July.

July. Four days rain. Sea-breeze moderate. Sultry nights.[7]

Auguſt. Five days rain. Sea-breeze in the middle of the day only. Intenſely hot in the mornings before the ſetting in of the breeze. Light land wind at nights.[8]

September. Nine days rain; four ſucceſſively. Sultry in the abſence of the breeze, which was ſtrong about noon. Land wind at nights.[9]

October. Eleven days violent rain. Storms of wind accompanied the rain on the ſecond inſtant, which increaſed on the third, and continued all night. Cold during the rain. Hot at other times. Land wind ſtrong at nights, and cold. Little ſea-breeze, and very cold days in general.[10]

November. Three days ſlight rain, ſucceſſively. Cloſe, hot days. No ſea-breeze, except

[7] It rained one day in this month in 1779—In 1781 nine days.

[8] It rained eight days in this month in 1779; five ſucceſſively—In 1781 four days, at different times.

[9] It rained four days in this month in 1779—In 1781 ten days.

[10] It rained ſeven days in this month in 1779—In 1781 twelve days. Vide p. 12. & 182.

now

now and then for a few hours, in the middle of the day. Land wind at nights, and colder than uſual at this ſeaſon of the year.[11]

December. Three days rain. Nights and mornings very cold. North winds ſome days. The weather cool and agreeable.[12]

This ſtatement of the ſenſible alterations of the atmoſphere, in which the expreſſions of *cold* and *hot* are to be conſidered comparatively, and thoſe days numbered as rainy, not as intire days of rain, but only when it rained for a few hours, or part of a day, is ſufficiently minute to ſhew how far its influence might have prevailed, in the production of thoſe diſeaſes which marked the year.

I have already ſaid, the 85th, 92d, 93d, and 94th regiments, arrived in Jamaica on the firſt of Auguſt this year, for the *San Juan* expedition *;—that the firſt battalion of the 60th, and the 79th and 88th regiments, were already

[11] It rained ſix days ſucceſſively in this month in 1779—In 1781 ſeven days, at different times.

[12] There was no rain in this month in 1779—In 1781 two days.

* Page 162.

in

in the iſland; that the flank companies of each regiment were encamped at *Caſtile Fort*, and afterwards at *Up-Park*; that the encampment continued from the beginning of Auguſt to the end of November; that I undertook the care of the camp hoſpitals; and that there were, by my return on the 12th of September, 267 men ill, chiefly of the dyſentery, with ſome bilious and remittent fevers, in the different hoſpitals of *Caſtile Fort* and *Up-Park*, and in the barrack of *Rock Fort*, which was then uſed as an hoſpital.

In the treatment of the dyſentery (in which, notwithſtanding the vaſt numbers that were attacked by it, we did not loſe one man in the acute ſtate of the diſeaſe), whether attended with fever or not, I proceeded with the ſudorific proceſs, as I had done in the ſpring. This autumnal flux, like all fluxes that I have ſeen, exerted its influence moſt on thoſe who were moſt expoſed to the weather.

Dyſenteries, as well as other diſorders, in hot climates, in autumn, partake more of a putrid than of an inflammatory nature; and perſpiration is raiſed with leſs difficulty, and with gentler medicines, than it is at other times, when the fibres are more rigid, and the air

air more dry and elaſtic; for which reaſon, mild diaphoretics, ſuch as antimonial, or ipecacuanha wine, and laudanum, were uſed in the camp this autumn; and evacuations, particularly bleeding, were ſparingly made. Sometimes the ſweat raiſed by the firſt vomit of *Ipecacuanha*, aſſiſted by diluting with barley-water, mint, balm, or ſage tea, put a ſtop to the diſeaſe.

I never gave *Ipecacuanha* as a vomit, nor *Glaſs of Antimony* as a purge, in the dyſentery, latterly in the Weſt-Indies, but previouſly to their operation, I ordered the patient to his bed, and diſpoſed him for ſweating. This I found by experience always inſured that operation, on which the cure depends; and ſometimes carried the whole effect of the medicine off that way, without either vomiting or purging, and with it, the diſeaſe.

In London, during winter, a perſon had taken a doſe of *Glauber's* ſalt, and the ſame evening went into a warm bath; after which he returned to his own houſe. In the night he was ſeized with pains in the bowels, and a conſtant irritation to go to ſtool. The next day he voided blood, and bloody mucus, and had a complete dyſentery. He took chalk julep

julep and laudanum for two days; but the ſymptoms increaſing, he had bloody excretions almoſt every quarter of an hour, with great ſtraining, anxiety, laſſitude and fever. Being conſulted, I adviſed him to go to bed, and to take *ten grains of James's Powder*; to cover himſelf well; and to dilute, and promote a ſweat; and to continue the ſweating, by repeated doſes of *James's Powder*, every four hours, drinking plentifully of warm balm, or mint tea. The *James's Powder* made him retch a little at firſt, and he continued to have ſeveral griping ſtools, until the powder produced a plentiful ſweat; after which, the pains abated; he had no ſtool for twenty-four hours; he took three doſes of the powder, and was cured.

Whether antimonial diaphoretics, or ipecacuanha, be uſed to promote ſweating, muſt depend on the habit of the patient, and the nature of the diſeaſe. But for the ordinary dyſenteries, which prevail in European climates, particularly in autumn, ipecacuanha is generally to be preferred.

It is my common practice, now in London, when called to a dyſenteric patient, to order him to bed, and to give him a ſcruple, or half

half a dram, or two ſcruples, of ipecacuanha; and direct that the operation of ſweating, rather than vomiting, ſhould be promoted. As vomiting always produces ſweating, the patient being in bed, it is eaſily ſupported by diluting: and I have often, with the ſweating cauſed by a ſingle large doſe of ipecacuanha only, cured the dyſentery.

There is no danger of inflammation, and its conſequences, when a flux ceaſes ſuddenly, after ſweating, as there is when it has been ſuppreſſed by opiates and aſtringents. In plethoric habits an increaſe of fever ſometimes ſucceeds, which is ſoon removed by bleeding, and a continuation of diaphoretics and dilution. Sometimes, from the ſuddenly ſuppreſſing the flux, though there ſhall be neither fever, nor dyſentery, while the patient remains in bed, ſome dyſenteric ſymptoms will return, as ſoon as he gets up, or goes into the air;—theſe are eaſily removed, by a table-ſpoonful of the VITRIOLIC SOLUTION, every eight hours *; with, occaſionally, a little chalk julep and laudanum.

* The preparation of the VITRIOLIC SOLUTION will be deſcribed, towards the concluſion of the third part of this treatiſe on the dyſentery.

When

When the glaſs of antimony is uſed, great care ſhould be taken that it is finely levigated: and in the doſe, that the ſtrength of the patient be conſidered. Another circumſtance attends giving it when the patient is in bed, which is, that its action on the bowels being abated by perſpiration, a much larger doſe may be taken that way: and let me repeat, that an active doſe of any antimonial ſhould never be given while the patient is up, and walking about. Ten grains of glaſs of antimony will act leſs on the bowels, while the patient is in bed, than three grains will while he is up, and the whole effect turned upon the bowels, by being expoſed to the air. Beſides, ſudden death has been frequently brought on by ſpaſm, from antimonials careleſsly adminiſtered *. If the glaſs of Antimony incline the patient to vomit, I adviſe diluting but ſparingly, unleſs what is brought up indicates foulneſs of the ſtomach; but copiouſly otherwiſe.

From the effects of the *Vitrum Antimonii Ceratum*, I have never been able to diſcover that

* For ſpaſms in the ſtomach or bowels, cauſed by antimonial medicines, laudanum is the only remedy; and it immediately removes them.

the

the antimony derives any benefit whatever from its mixture with the *Wax*. An active doſe of either muſt be given, or it anſwers no end; and if melting the antimony with the wax weaken its force, a greater quantity muſt be given to produce a proper effect.—Therefore, I always uſe the common glaſs of antimony; preferring a ſimple medicine that I can depend upon, to a compound medicine that muſt be liable to uncertainty in its operations, according to the attention, or careleſsneſs, employed in its preparation.

The operation of the glaſs of antimony, in common with all the preparations of antimony, in proportion to their activity, is exerciſed on the firſt paſſages. But every preparation of antimony is more or leſs diaphoretic, whether it create a nauſea or not, while any part of the mineral remains undeſtroyed in it. We perceive this in thoſe, which are called the *Calces*; and however violent the operation of the ſtronger preparations are, their laſt effort in the body is always at the cutaneous pores.

It is remarked, by LIND, "that Antimony appears to poſſeſs a virtue eminently febrifuge,

" fuge, which it frequently exerts independent " of *any evacuation**." It would, if it were ſo, be very remarkable; but the truth is, that antimonials are not febrifuge, where no evacuation is produced, and the ſtomach remains unnauſeated.

After the *Cerated Glaſs of Antimony* had been introduced into public practice, in the dyſentery, its reputation ſoon ſpread over all Europe; but from the unguarded manner of giving it, while the patient was expoſed, and walking about, without more reſtriction than was uſed in a common vomit, or purge, it was always dangerous, and it ſoon ſunk into diſcredit. The timid might well refrain from uſing it; for it ſometimes ſurpriſed them with the moſt violent and unlooked-for effects. The doſe of it was from two grains, to ten, or twelve, ſometimes to twenty, according to the age and ſtrength of the patient; and the doſe was repeated every twenty-four, or forty-eight hours, as occaſion required. It was given faſting, and the patient was "*forbid drinking* " *any thing after it for three hours, unleſs very* " *ſick, or diſpoſed to vomit; in which caſe warm* " *water, as in other vomits.*"—" *In its opera-* " *tion, it ſometimes makes the patient ſick, and* " *vomits. It purges almoſt every perſon, but I*

* Page 260.

" *have known it cure without any ſenſible evacu-*
" *ation or ſickneſs* *."

It is this unperceived, and inſenſible evacuation, to the preceding writer, for which I contend, and by which all violent degrees of dyſentery, let the ſpecies or deſcription be what it may, when the *primæ viæ* are cleanſed properly, may be cured, if they are curable at all.

This axiom I know is repugnant to the opinion of the learned BOERHAAVE, who inſiſts on the neceſſity of a variety of methods, and a variety of medicines; and ſtrongly condemns the recommending any one univerſal way of curing a diſeaſe †. But I muſt diſſent from that great man, and in this very diſeaſe which he inſtances: for I believe he only took this notion from an hint given by SYDENHAM ‡.

* YOUNGE's account of the *Vitrum Ceratum Antimonii*, in the Edin. Medical Eſſays, Vol. V. Pages 164, 165.

† Quam vanum, fallax, et damnoſum ſit, ad has commendare unum, qualecunque demum ſit, medicamentum proprium? aut unam univerſalem medendi methodum? Aph. 977.

‡ Fieri poſſit, ut variæ enaſcantur dyſenteriarum ſpecies, ut ſunt variolarum et epidemicorum aliorum, diverſis conſtitutionibus propriæ, et quæ proinde medendi methodum in aliquibus diverſam ſibi ſuo jure vindicent. P. 181.

I might

I might indeed have many ſcruples in ſetting up a theory againſt ſo great an authority as BOERHAAVE; but in practice I can have none, where the fact has been ſupported by the teſtimony of my own eyes, in many thouſands of inſtances; and no dogma, however reſpectable, can convince me that *Bark* is more certain in the cure of an *Ague*, than *ſudorific medicines*, properly adapted, are in an acute *Dyſentery*, early uſed, after the firſt paſſages are cleanſed, before deep ulceration, or gangrene, has actually taken place,—under every diverſity of ſeaſon, climate, and conſtitution.

In the hiſtory of the dyſentery, many practical writers have noted the relief which has followed a plentiful ſweat; and that the pains and frequency of the ſtools have abated, during a free diſcharge by the ſkin. SYDENHAM's proceſs with whey, in 1669, was effectual, becauſe it promoted ſweating. In the following years it did not anſwer, as a change had taken place in the diſeaſe, and leſs dilution was neceſſary, when it became leſs inflammatory, and, as he ſays, "had loſt much of its ſubtilty, "and proved more humoral," and yielded to purging medicines and opiates.

FABRICIUS HILDANUS remarked that a woman who had taken forty grains of lapis bezoar, in a dyſentery, broke out in an univerſal warm ſweat, and that all the ſymptoms abated; ſhe ſoon after fell into a ſound ſleep, and in a few days was intirely recovered.

LAMONIERE obſerved, that a ſweat checked the violence of the diſeaſe immediately: and BAGLIVI ſays, a ſweat happening commonly cures it.

HILLARY was ſurpriſed that the delirium, tremors, and all other bad ſymptoms, went off from a free diaphoreſis, which was raiſed by ſmall doſes of ipecacuanha and diluting; and ſays, "we muſt not always expect to meet "with ſuch happy ſucceſs in every patient's "caſe;" yet, he ſays, he had "more than "twice ſeen this method ſucceed."

But theſe inſtances, with many others, have been conſidered merely as accidental events, inimitable by art, and not as materials to found a regular ſyſtem on.

HIP-

HIPPOCRATES himſelf allows the good effects of ſweats, even though they were not on critical days. He ſays, "that though a criſis "may happen by the mouth, by ſtool, by "urine, or by the joints, yet a ſweat is a criſis "common to all diſeaſes *."

Though a criſis in fevers may be completed by ſtool, by urine, by bleeding at the noſe, or by abſceſs, yet theſe are often only the harbingers, or the followers of a criſis; but a warm, and uniform ſweat, accompanied with ſleep, never is: and is always in itſelf, invariably, if not interrupted, a perfect termination of a fever.

SYDENHAM found when a ſweat was kept up for twenty-four hours, it was the beſt cure for the plague and peſtilential fever. He ſays, "that the patient is always ſtronger while the "ſweat flows; that ſeveral, by his advice, "who were kept in a ſweat for twenty-four "hours, were ſo far from complaining of "greater weakneſs from thence, that they de-"clared, that in the ſame proportion as the "ſuperfluous humour was carried off, they

* De Acutorum Morborum Victu. Sect 4. Art. 75.

" perceived their ſtrength increaſe. That " while the ſweat continues, the patient " judges himſelf in a fair way of recovery, " and, in the opinion of the attendants, ſeems " in no farther danger; but as ſoon as the " ſweat ceaſes, and the body begins to dry, " he grows worſe, and a kind of relapſe is oc- " caſioned." He directed the ſweat to be kept up for twenty-four hours, by draughts of ſage poſſet drink, or mace ale, taken now and then; ſtrictly cautioning againſt wiping off the ſweat, and not allowing the patient's linen to be changed, however moiſt or foul it was, till twenty-four hours after the ſweat was gone off: during which time he was adviſed to be careful not to get cold, but to let his linen dry on his body, to take all his liquids warm, and to continue the ſage poſſet drink. The next morning a purge was given. He ſays, he did not loſe a ſingle patient after he began this proceſs. P. 126, 127.

Caius, after much unſucceſsful experience, found that the cure of even the *Sweating Sickneſs*, conſiſted in keeping the patient in bed, and promoting a continued, and moderate ſweat for twenty-our hours: " ſudandi, mini- " ſtrandique tempus ideo horis 24 definio, " quod hæc ratio fælicis tutæque curationis

" atque

" atque miniſtrationis eſſe ſolet." *De Ephem. Britan.* P. 110.

HELMONT indeed goes ſo far as to aſſert, that all fevers may be cured by ſweating, and even with a ſingle doſe of one medicine.—" Unica " nimirum falce amputatur omnium febrium " cauſa occaſionalis. Id remedium eſt ſu- " doriferum. Etenim iſtud remedium eſt Præ- " cipitatus Diaphoreticus PARACELSI, qui om- " nem ſanat febrim unicâ potione." *De Febribus*, cap. xiv.*

We have not drawn all the benefit we might have done from the ſtores of diaphoretic medicines, that chemiſtry and improved ſcience have opened to us, which were ſhut to our anceſtors. Their alexipharmics were compoſed of treacles, poſſets, and heating compoſitions; which, to raiſe a ſweat, were generally aſſiſted by hot rooms, and a heavy load of bedding. Thus the circulation was forced, and in caſe a ſweat was not excited, the inward flame was

* HELMONT or his editor, has made a miſtake here. The medicine uſed by PARACELSUS, and, as he ſays, " quo morbus omnis curatur, qui poteſt vel debet ex ſua " natura proprietateque ſanari ſudoribus," was his *Specificum Diaphoreticum*, and not his *Præcipitatus Diaphoreticus*. Vide PARACELS. Archidox. lib. 7.

increaſed, the blood-veſſels ruptured, and a train of evils produced, which in the end killed the patient. From hence it is that we are furniſhed with ſuch frightful hiſtories of bubos, petechiæ, exanthemata, and carbuncles, which at this time are rarely ſeen.

When a patient is firſt covered up, and has taken his diaphoretic medicine and drinks, in the beginning of a dyſentery, particularly in hot climates, it may reaſonably be expected, if he be young, groſs, or plethoric, that ſometimes, inſtead of ſweating, he become reſtleſs and hot; his ſtomach loaded, and his ſkin dry: here bleeding, or an emetic, is neceſſary, which never fails to diſpoſe the body to ſweat. A very ſmall quantity of blood taken away, and what almoſt any patient may ſpare without injury, or ten grains of ipecacuanha, when the patient is weak, will generally be ſufficient to anſwer the end.

It happens ſometimes alſo in the dyſentery, and very commonly in fevers, that large doſes of James's Powder, and other antimonials, are given, and frequently repeated, without cauſing perſpiration. Here, I have found practitioners perplexed, and making wrong concluſions;—finding neither perſpiration, nor any other evacu-

evacuation produced, they ſtill perſiſt in the antimonial, and increaſe the doſe, ſuppoſing a great deal muſt do what a little will not; which only increaſes the fever and brings on delirium, unleſs a ſudden operation, upwards or downwards, breaks forth, which may endanger the ſafety of the patient.

It has always been a rule with me, to deſiſt from any powerful or active medicine, or to combine ſomething with it, where a common doſe, or quantity, has not produced the deſired effect, whether vomiting, purging, or ſweating be intended; or whether the medicine be bark, opium, mercury, or antimony.

Where Antimonials have been taken, as I have here mentioned, without a proper effect, and where bleeding, or vomiting may be improper, a doſe of laudanum acts like a charm; and brings on immediate relaxation of the veſſels, and profuſe ſweat. Some people mention difficulty in raiſing a ſweat, particularly in fluxes; but there is no difficulty in it, which the methods here related will not remove.

When the dyſentery is tranſlated into a fever without flux, or has degenerated into a diarrhœa or teneſmus, the treatment muſt be regu-

regulated according to the habit of the patient, the nature of the diſeaſe, and its duration, as from any other origin, But as theſe diſeaſes ſeldom ſpring from the dyſentery, when the ſudorific mode of practice has been purſued, eſpecially when it has been early attended to, and when warm clothing and careful diet have been uſed until the bowels have recovered their tone, I refer to what has been written on theſe ſubjects by others; thinking it unneceſſary to enlarge my publication with the cure of diſeaſes, that a faithful adherence to the practice it contains, will be found effectually to prevent.

Whetever opinions may have been propagated and honoured with credit they do not deſerve, I think it is neceſſary to inform practitioners unacquainted with hot climates, that I never ſaw a dyſentery during my reſidence in the Weſt-Indies, in which even the mildeſt acids were not prejudicial. Nay, I have frequently known dangerous relapſes, occaſioned by the patient's eating a ſmall piece of a pine-apple, or orange, and that ſuch wines only, as are intirely free from auſterity, are proper to be uſed in the dyſentery in thoſe climates*.

As

* The troops in ſome of the iſlands during the war, were liberally ſupplied with thin, ſharp, French prize wines, by way

As to *contagion* from infection in the dyſentery, I muſt confeſs I never ſaw an inſtance of it: neither do I believe there is any ſuch thing. But this is a field for ſpeculation, that has long amuſed the pedantry of the ſchools, and ſhould never be entered by practical writers. For my part, I cannot even venture to conjecture, what that agent is, which determines the ſpecies, and ſpreads epidemical diſeaſes. HIPPOCRATES ſeems to have placed it in the evident changes, and cognizable ſtate of the air; SYDENHAM, to ſome inſcrutable influence, and imperceptible quality of it.—If SUCH DOCTORS diſagree, "who ſhall decide?"—There are ſome diſeaſes, we know, that follow changes of the atmoſphere; but there are others, which make their revolutions, and viſit the earth at uncertain periods, for which we can trace no cauſe, depending on combinations, in which, perhaps, the influence of the planets may have ſome ſhare.

It has often happened that hundreds of men in a camp have been ſeized with the dyſentery, almoſt at the ſame time, after one ſhower of rain; or from lying one night in the wet and

way of œconomy:—this œconomy coſt the nation the price of many valuable lives

cold.

cold. People under ſimilar circumſtances of clothing, air, water, diet, and ſituation, muſt be ſubject to ſimilar diſeaſes, as far as conſtitution and habit of body are ſimilar:—and yet it often happens that the dyſentery begins with a few people, and ſpreads itſelf by degrees, until a multitude are affected, and the diſeaſe becomes general.

It is incredible, that the ſmelling a little human blood, that had ſtood ſome months in a phial, gave the man a dyſentery, mentioned by PRINGLE*: or that the perſon FORRESTUS ſpeaks of got the plague, by only putting his hand into an old trunk †: or that the ſhaking an old feather-bed, which had lain by ſeven years, raiſed a plague at *Wratiſlau*, which deſtroyed 5000 perſons in twelve weeks, as related by ALEXANDER BENEDICTUS‡: ſo is the ſtory of the leather coat of FRACASTORIUS§, and the hogs of BOCCACIO||.—Such things may

* Page 255 Oct. Ed. 1768.

† Lib. VI. Obſerv. 22. ‡ Cap. 3.

§ Lib. II. Cap. 7, De Morb. Contag. He ſays twenty-five Germans got the plague, and died, by putting on an old leathern coat, one after another, infected by the plague at *Verona*, in 1511.

‖ *Giornata Prima.* He ſays, that, during the plague at *Florence* in 1348, two hogs fell into convulſions, and died within an hour, only by tearing and ſnuffing upon ſome rags, which had been worn by a man who died of the plague.

be

be true; but when probability is ſhaken, reaſon inclines to ſcepticiſm.

I am far from ſuppoſing, that any writer of character aſſerts what he himſelf diſbelieves; —nay, I do not doubt that even PARACELSUS was in earneſt, when he ſaid, "mulier ſub "aſcendente malitioſa genita, infantem in "cunis, per aſpectum et verba incantare po-"teſt; ſic fieri quoque perfacilè poteſt, ho-"minem unum alteri hunc morbum per im-"precationem infligere poſſe." *De Peſtilitate Tract.* 2. *Cap.* 2,

We obſerve in camps, and hoſpitals, that thoſe people whoſe dirty employments ſubject them in a particular manner to a depravation of their habits, ſeldom eſcape the preſent epidemic; and this gives riſe to the vulgar expreſſion, and very incorrect notion, of *catching* the diſeaſe.—And, we obſerve, that others, from the ſlighteſt deviation from regularity, loſe the power by which the body reſiſts diſeaſes, and they are alſo attacked. But theſe effects are not to be attributed to infection; for thoſe people, who keep the vital and animal powers in uniform confederacy, by temperance and calmneſs of mind (for fear, by lowering the vital energy, ſubjects the body to diſeaſe),

diſeaſe), nouriſhing diet, proper clothing, and cleanlineſs, and by keeping a free and regular paſſage open for all the excretions, are proof againſt the aſſaults of foul and peſtilential air. Such people ſeldom ſuffer, even by the plague itſelf; while all around them periſh. In Conſtantinople, the plague, with filth, and neglect, the effects of Mahometiſm and predeſtination, generally go together, and are ſeldom ſeen aſunder.

It ſhould follow, if contagion were ſupported by infected bodies, that no perſon ſhould ever eſcape infection (as at Oxford aſſizes in 1577), who was within the ſphere of its action; and that thoſe who were intirely ſecluded from it, and free from all contiguity to infected people, or ſubſtances (as the Collegers were in the town of Cambridge when the plague was laſt in England), ſhould be exempt from it.

But in oppoſition to this, RHAZES lived 120 years, and often practiſed in plagues. HODGES remained in town and attended the ſick, during the great plague in London in 1665. KAYE was in the midſt of practice in the ſweating ſickneſs in 1551, without any inconveniency. PROCOPIUS informs us, that during a terrible plague

plague at Conſtantinople, in 543, which almoſt deſtroyed the whole city, no phyſician, nor other perſon, got the plague by attending, dreſſing, or touching the ſick *. Yet moſt of the Capuchins, the Jeſuits, the Recollets, the Obſervantines, the Barefooted Carmelites, the Reformed Auguſtines, all the Grand Carmelites, the Grand Trinitarians, the Reformed Trinitarians, the Monks of Loretto, of Mercy, the Dominicans, and Grand Auguſtines, who kept themſelves ſecluded in their ſeveral convents, and took every precaution to avoid the plague, while it raged at Marſeilles, periſhed by it †.

There are no epidemical nor contagious diſeaſes, that attack every perſon who breathes the ſame air, or that is in contact with the infection; elſe whole regions would be entirely depopulated. The habit muſt be graduated, or adapted, for the reception of a diſeaſe. In ſome conſtitutions of body the acceſs is eaſy, in ſome difficult, and in others impoſſible. But where the revelation of this myſtery is to be found, no one can tell.

* De Bello Perſico, Lib. II. Cap. 22.

† Journal de la Contagion à Marſeilles. P. 42.

To people who have not ſeen the rapidity with which the dyſentery, in its worſt degree, makes its ravages in hot climates, that ſaving of time which I propoſe, and followed in my practice, by deriving a double operation from antimonial purgatives, or emetics, and ipecacuanha, by always keeping the patient in bed, or well covered with a blanket and diſpoſed to ſweat, as ſoon as he had taken thoſe medicines, may ſeem unneceſſary.

The time was, when it certainly would have been thought of with horror * ; and there may be ſtill, for aught I know, ſome remains of that ancient ignorance, which has ſeen the good effects of a vomit of ipecacuanha, a little toaſted rhubarb, and an anodyne draught.

If any ſuch opinions yet remain, it is not my intention to contend with them ; nor with devotees to ſettled forms, and foes to innovation, who may think that a vomit, purge, or diaphoretic, ought each to have its regular bedſide period ; and that nature, like themſelves, cannot be forced to do two things at once.

* Winslow proſtrated himſelf before the altar, for having ventured to give a patient *two ounces of manna* for one doſe.

Neither

Neither ſhall I contend with HELMONT and his followers, concerning the moral cauſes of fevers; nor with CAMPANELLA and his followers, who pretend that a fever is no diſeaſe; —for I know that even HIPPOCRATES, CELSUS, and SYDENHAM do aſſert that it ſometimes proves ſalutary, and is often the inſtrument which nature employs, to expel morbific cauſes from the body. The former opinions are incomprehenſible to me; and the latter I conſider as a *norma loquendi* among phyſicians, which cannot apply to original, nor even to ſymptomatical fevers, unleſs it can be proved that nature always juſtly proportions the means to the end, and that people never periſh under her hands.

Whatever may be the moral neceſſity of one evil in the works of nature to remove another, or the utility of ſuch remedies as fevers, of which people die, I am of opinion, that diſeaſes ſhould ſeldom be left to nature; and were I not confirmed in this opinion by my own practice in the dyſentery, I ſhould be inclined to it, from the ſucceſs of SYDENHAM, who took ſome diſeaſes intirely out of her hands, when her methods were uncertain, and gave them a ſpeedy termination.

For my part, I have no opinion of nature as a medical deſpot, nor of obſequious phyſicians as her miniſters; which may be thought hereſy in the Temple, where the High Prieſt himſelf ſays, Νουσων φυσιες ιητροι *. Nature, in her beſt manner, is tedious in the cure of diſeaſes; and even when aſſiſted by HIPPOCRATES, took fifty-one days to cure *Pythodorus* of a fever. Where her ſhorter methods are purſued, unobſtructed, how precarious are her attempts; and what breaches are often made in the body, and what deſtruction of parts follow, by hæmorrhage and abſceſs!

The ſcience of phyſic muſt be conſidered as extremely imperfect, and literally "ars conjecturalis," until we can take a diſeaſe intirely out of the hands of nature; and ſet up, or take away, ſuch operations in the body, as are neceſſary to terminate diſeaſes when, and how we pleaſe. This I know may be done in many endemical diſeaſes; and in ſuch as are conſtant in their appearance; and in thoſe that are the produce of certain places, and ſtated ſeaſons of the year.

* *Nature cures diſeaſes.* Epidemiorum Lib. VI. Sect. 5. Art. 1.

Wherever

Wherever this practice is uſed, the doctrine of critical days, ſo holily obſerved by the ancients, makes but a ſmall figure in the healing art; and will be as little regarded, or relied on, when followed in temperate climates, as it is in polar, and equatorial regions.

Nature, in the torrid zone, ſeldom cures any diſeaſe;—all acute diſeaſes are found to make a regular, but haſty progreſs to death. There, all the oracular prognoſtics of the divine old man, are not ſo confidently to be relied on, in fevers, as four or ſix hours ſound ſleep, accompanied with a warm, univerſal ſweat.—But it requires the exertion of conſummate ſkill, to protect nature from the fury of the diſeaſe, until this compoſure is obtained.

However adequate the trifling practice, in common uſe, may be to the conquering of ſlight fluxes, ariſing ſolely from *ſtimuli* in the inteſtines, and may accord with the convenience and ſituations of the higher ranks of people in luxurious life, it is otherwiſe when applied to thoſe with ſerious diſeaſes, in inferior ſtations, and in indigent circumſtances; and never ſhould be thought of where great maſſes of people are crowded together in jails, hoſpitals, ſhips, and armies.

ON THE

DYSENTERY.

PART THE THIRD.

AT firſt, when I determined on this publication, it was my intention to have given a ſpecimen of the practice of every author of reputation, who had written on the dyſentery, that thoſe who are remote from the advantage of libraries, might have, in a ſmall compaſs, all the information that has been ſuggeſted in different parts of the world, on this important diſeaſe, that lies ſcattered through a multitude of books; which I thought would extend the utility of a publication of this ſort as much as poſſible.

But the dyſentery being a ſubject ſo univerſally diſcuſſed among phyſicians, and on which

one would imagine it was disgraceful to be silent, I found by farther investigation, that the smallest extract from every author who has written thereon, would be a voluminous work of itself, and of more curiosity than utility. Therefore I have collected only the most interesting circumstances that have occurred to me in the course of my reading on the subject; and I flatter myself, though I have abridged my original plan, that the compilation I have made will be of use to young practitioners, in the navy and army, and to residents in the colonies; and that it will also save much trouble to those who have but little leisure, and many opportunities of making and comparing observations on this disease, in various climates, and who prosecute their enquiries with an intent to publish them. It will also shew that many authors have arrogated to themselves discoveries which belonged to their predecessors; and may prevent others incurring the mortification that must necessarily follow the propagating old doctrines, as novelties.

Indeed there is so little useful discrimination on this disease, to be found among writers after GALEN, that if we except TRALLIAN, the rest are very little more than compilers;—or copiers of GALEN, who was himself a copier of

of the ancient Greeks;—and thoſe of later times, commentators on their predeceſſors, deſcanting on their practice, and diſputing concerning the uſe, and abuſe of acrid, and unctuous glyſters, bleeding, vomiting, purging, fruit, aſtringents, opiates, &c.—and in more recent times, about contagion, rhubarb, ipecacuanha, and ſaline medicines.

From the moderns, all that I can collect amounts to no more than this:—that different practitioners having ſeen the diſeaſe under different circumſtances, conclude that every perſon beſide themſelves, has been miſtaken reſpecting the true method of treating it.

One phyſician has ſeen the dyſentery attended with great fever, and he inſiſts that copious bleeding, by way of evacuation, is the cure for it; and quotes TRALLIAN, or BOTALLUS, for his authority.

Another has ſeen an autumnal dyſentery in marſhy ſituations, and inſiſts that bleeding is pernicious; or, if performed, that it ſhould be done in very ſmall quantities, by way of revulſion; and quotes GALEN, AETIUS, and TRALLIAN, for that.

Another has ſeen the dyſentery abounding with bile, and acrid diſcharges, and declares that fruits and purging are the cure; and quotes TRALLIAN's example there alſo.

Another has ſeen the dyſentery where crudities and foul-humours have prevailed in the firſt paſſages, and inſiſts that fruits are deſtruction; and ſays HIPPOCRATES has forbidden them in all diſeaſes of the bowels.

Thus we have been furniſhed, in different parts of the world, with books ſupporting every hypotheſis, that contradiction and local prejudice could invent; without the ſmalleſt conceſſion, that theſe contentions concern but accidental ſymptoms, which will ever be ſubject to variation: and that the principles of the diſeaſe itſelf, muſt be attended to on far other grounds than theſe.

It was not by ſuch methods that SYDENHAM raiſed his fame. What a figure would he have made, if, after his ſucceſs with *Whey*, by which he cured all his patients in the autumn of 1669, he had publiſhed to the world that *Whey* was a certain remedy for the dyſentery; when in the following year, nay, in the cold weather

weather of the ſame year, he found it had no effect?

He would have been obliged to have contradicted himſelf; or to have copied VANDER HEYDEN, who had written on the ſubject, and to have remained the author of a monſtrous abſurdity.

In the following ſelection, it will appear, that I have omitted a multitude of writers; but I believe none, who, however judicious, have any claim to originality.

HIPPOCRATES, the great maſter of our art, ſays, among the general and particular cauſes of dyſenteries, that after an unuſually dry winter, with northerly winds, if a rainy ſpring ſucceed, with ſoutherly winds, dyſenteries will prevail in the ſummer; particularly among women, and people of a moiſt habit *. That after a winter with ſoutherly winds, rainy and mild, if the ſpring ſhould be very dry, with northerly winds, dyſenteries will prevail †. That long continued dry weather will produce

* Aphor. 11. Sect. 3.

† Aphor. 12. Sect. 3.

dyſen-

dyſenteries ‡. That dyſenteries may ariſe from bile and phlegm falling on the bowels, and there corroding and ulcerating them §. That black bile may cauſe dyſenteries; then they prove mortal ||. That a diarrhœa may cauſe a dyſentery ¶. That people paſt their youth are moſt obnoxious to dyſenteries **. That a plethora, from the loſs of a limb, by amputation, may cauſe a dyſentery ††.

In reſpect to his practice in the dyſentery, the following is a ſpecimen:

"℞ Fabarum purarum quadrantem; furculos rubiæ tritos duodecim; commiſceto, et coquito, ac opimè delingenda hæc porrigito." *De Acutorum Morborum Victu*, Sect. 4. Art. 105.

He adviſes warm fomentations to be applied to the belly, when the pains are ſevere, and to give glyſters of milk; and when there is fever, to uſe emollient and unctuous glyſters often, to diſcharge the ſharp humours. Milk was his

‡ Aphor. 16. Sect. 3.
§ De Affect. Lib. cap. 7.
|| Aphor. 24. Sect 4.
¶ Aphor. 75. Sect. 7.
** Aphor. 30. Sect. 3.
†† De Articulis, Sect. 4. Art 38.

general

general medicine in the dyſentery. Aſſes milk, goats milk, or cows milk. Sometimes he gave crude milk; ſometimes boiled milk; and ſometimes milk with hot ſtones quenched in it*.

In Aph. 64. *Sect.* 5. he admoniſhes againſt giving milk, when there is any pain in the head, and when there is fever and thirſt; and where there is a copious diſcharge of blood, or a bilious purging, with an acute fever.

In the writings of this venerable man, there is a paſſage relating to the dyſentery, concerning the meaning of which, the learned have diſputed.

Πορνειη αχρωμος δυσεντεριης ακος †.

Impudens ſcortatio dyſenteriæ medetur.

CALVUS, the firſt tranſlator of HIPPOCRATES into latin, from the Vatican manuſcript, reads Πορνη, *Meretrix*, inſtead of Πορνειη, *Fornicatio*; and ſuppoſes αχρωμος to be the name of a wo-

* I have omitted the treatment of the ſon of *Eratolaus*, (Lib. VII. Art. 5. Epidemiorum), as that more than ſeventy-one days illneſs, was cured principally by aſſes milk at firſt, and cows milk afterwards, with ſome auſtere black wine in it.

† Epidem. Lib. 7. Art. 140.

man

man who had a remedy for the dyſentery, and tranſlates the paſſage thus :

Meretrix Achromos dyſenteriæ medela.

DACIER is of opinion that HIPPOCRATES has been made to ſay what he never intended ; and thus tranſlates the paſſage :

La fornication eſt un méchant et déteſtable remede à la dyſenterie.

He alleges, that the reading ſhould be αχρωμον, inſtead of αχρωμος, and agree with ακος ; and that αχρωμος is an old word, and not to be found in any author but HIPPOCRATES and ARTIMEDORUS ; and that it has no certain and determinate meaning.

SUIDAS explains it *immodeſt*, *impudent*, but that it alſo ſignifies *deteſtable* and *wicked* ; as αχρωον, which is the ſame as αχρωμον, is explained by HESYCHIUS, πονηρον, wicked, *Remarques ſur le troiſieme livre de la Diete.*

LE CLERC ſupports DACIER's opinion. *Hiſt. de la Medicine*, *Lib. III. Cap.* 30.

Whatever may have been the original text, in this paſſage, or the real opinion of HIPPO-

CRATES

CRATES concerning a remedy, "en ce qu'il bleſſe l'honêteté et la bienſéance," we find a ſimilar alluſion in another part of his works *; and an unequivocal deciſion on this point in the learned STAGIRITE,

Δια τι τα αφροδισια την κοιλιαν ψυχει και ξηραινει †;

And indeed, in obſtinate diarrhœas, many others have adverted to the ſame circumſtance.

"Alvi profluvia inveterata aliquando per Venerem reſiccantur ‡."

"Alvi profluvium inveteratum Venus reſiccat §."

CELSUS, *Lib. IV. Cap.* 15, ſays, Among the diſeaſes of the inteſtines may be reckoned the *Tormina*, by the Greeks called Δυσεντερια. In this diſorder the inteſtines are exulcerated on the inſide; blood flows from them, mixed with fœces, which are always liquid; ſometimes with a kind of mucous excretions, and ſometimes caruncles are diſcharged with excrements;

* Epidem. Lib. VI. Sect. 5. Art. 28.

† Prob. XVIII. Sect. 4.

‡ AETIUS, Tetrab. 1. Serm. III. Cap. 8.

§ PAUL. ÆGINETA, Lib. I. Cap. 35; et AMAT. LUSITAN. Cent. II. Obſ. 47.

there

there is a frequent desire of going to stool, with a pain in the anus; some inconsiderable discharge is made with the same pain, and the torment becomes more intense; which, however, after some time, is alleviated; the patient has very little rest; his sleep is interrupted; he becomes feverish; and after a considerable length of time, either perishes under the inveteracy of the distemper, or escapes with much difficulty and torment.

First of all, the patient must have rest; for all agitation promotes the exulceration of the parts. Then he must drink, fasting, a cup of wine in which the bruised root of cinquefoil has been added. Apply repellent cataplasms to the belly. As often as he goes to stool, let him wash with a decoction of vervain. Let him eat purslain boiled, or out of strong pickle, and use an astringent diet.

When the disease is farther advanced, he advises glysters of cremor of ptisan, or milk, or melted fat, or stag's marrow, or oil, or butter of roses, with the raw white of an egg, or decoction of linseed; or, if sleep be wanting, with the yolks of eggs in a decoction of rose-leaves. He says, these things mitigate the pain, and are of great benefit when there is a loathing

loathing of food. He ſays, THEMISON uſed ſtrong brine in ſuch caſes.

The food to be ſuch as gently binds the belly; diuretics are ſerviceable if they have their proper effect, by diverting the humour another way, otherwiſe they increaſe the diſeaſe; for which reaſon they are not to be given, but to ſuch people as have been accuſtomed to receive benefit from them. The common drink, if the patient be feveriſh, ſhould be pure warm water, or water endowed with an aſtringent quality: or if there be no fever, thin, auſtere wine. If, after ſeveral days, the patient find no relief from theſe things, and the diſeaſe grow inveterate, he adviſes the drinking water of a good degree of coldneſs, which he ſays aſtringes the ulcers, and lays the foundation for a recovery; but when the purging is ſtopped, the patient is to return immediately to his warm drinks. When a putrid and fœtid ſanies is diſcharged, or pure blood comes away in the ſtools, the belly is to be well cleanſed with glyſters of hydromel, and thoſe other remedies before-mentioned. He ſays, an effectual remedy againſt a cancer of the inteſtines is a lump of minium bruiſed, with half a pound of ſalt; or a glyſter of the ſame with water. If blood be voided in the ſtools, the patient

patient is to eat and drink ſuch things as are of an aſtringent quality.

DIOSCORIDES, Των περι τα εντερα παθων Βοηθηματα, recommends in the dyſentery, among a multitude, the following remedies, with wine, or ſome aſtringent decoction;—agallochum, ſage, juice and herb of hemp, agrimony, the juice and dried root of cinquefoil, hypociſtis, juice of horehound, pimpinella leaves and root, willow root, comfrey root, ſeed and leaves, wild-ſorrel ſeed, water-lily ſeed, decoction of marſh-mallow root, bramble-buſh juice and ſtalks boiled, goat's milk boiled, alcea root, cudwort with auſtere wine, elatine boiled with linſeed, agrimony ſeed with wine and honey firſt boiled, wild fennel ſeed, white ivy flowers, with wine twice a day, myrtle-berries with wine, lotus boiled in wine, Lemnian, or Sinopian earth in wine, wild ſage root with wine, œnanthe, bull-ruſh ſeed toaſted, chondrilla juice, orris with wine, mullen-root, flea-wort in water, dry album græcum moiſtened with wine, coagulum of a hare in water, &c.

Among the articles of food, are mallows without ſalt, ripe freſh olives, blood of a goat, deer,

deer, or hare fried, dry ripe grapes, unripe dry grapes made into bread with flower, bread toaſted and yolks of eggs, ſtarch boiled with chondrus and milk, blackberries, plantain-leaves and green tender branches of bramble-buſh boiled and taken with vinegar and oil, galls, or rhus mixed with the food, zea roaſted, lentiles roaſted and powdered, grape-ſtones powdered, millet, zea, rice, and lentiles toaſted, grecian beans boiled in poſca, linſeed fried and eaten with honey, honey boiled, taken alone or with pomegranates, quinces and ripe medlars boiled with honey, myrtle-wine, juice of myrtle-berries, wild pears, ſuccory, parſley and plantain boiled in vinegar, pomegranate-ſhells, walnuts, dates, purſlane, deer's fat boiled with cheeſe, or flower, the liver and brain of a goat fried with honey, new cheeſe ſcraped and fried with honey, young ſwallows roaſted, bees-wax, or honey-comb boiled in the drinks, cabbage twice boiled, raw unwaſhed lettuce; where there is a loathing of food, the coagulum of a young hind, hare, or kid, diſſolved in water and drunk, &c.

Cataplaſms to be applied to the belly, compoſed of oleaſter-flowers, and barley-meal, mixed with warm oil and water; bramble-buſh leaves, quinces, and cerate; myrtle-leaves

beat up with wine and oil of unripe olives; pomegranate-ſhells boiled in wine with cerate; barley-meal, bramble-buſh, and wine; alum, with aloes and acacia, &c. &c.

Glyſters of freſh butter, and others compoſed of decoctions of mallows, fenugreek-ſeed, &c. when there is no pain, pickle, with wine; burnt hartſhorn, with wine and oil of roſes; arſenic, twice burnt with paper, and wine; ſcoria of lead with myrtle-oil; bitumen, melted with ptiſan, &c. where there are eating ulcers, fiſh-pickle; old urine; decoction of greek beans with goat's ſuet; red earth with aſtringent decoction, or ſharp brine, &c.

To aſſuage the griping pains excited by acrid glyſters, others are to be given compoſed of milk, or butter, or decoction of chondrus; or of ſuet, with cremor of ptiſan; alſo fat of fowls, geeſe, or deer; or marrow of a deer or calf, by itſelf warm, or with cremor of ptiſan.

In his chapter on milk, he recommends boiled milk, and milk with hot flints quenched in it, for fluxes and ulcerations of the inteſtines.

GALEN

GALEN ſays, an eating or ſharp humour is the cauſe of the dyſentery, which at firſt abſterges, then abrades, and at length ulcerates the inteſtines. *De Locis Affectis*, *Lib. I. Cap.* 2. That it may ariſe from a plethora, in which nature relieves herſelf by the inteſtines. HIPP. *de Nat. Hominis Comment I. Sect.* 32. From the loſs of a limb, from indolence after an active life, from obſtruction of the menſes. *De Locis Affectis*, *Lib. V. Cap.* 8. He alſo mentions among the cauſes of a dyſentery, phlegm, yellow bile, and black bile.

He confirms the opinion of HIPPOCRATES, that a dyſentery ariſing from black bile is mortal. *De Uſu Partium*, *Lib.* 5. *Cap.* 10. He obſerves, that an ulcer from black bile muſt be mortal, unleſs the unſound parts are cut intirely away from the ſound, which cannot be done in the inteſtines. *De Atra Bile*, *Cap.* 5.

In the treatment of the diſeaſe, he ſays, it contributes greatly to the cure of the diſeaſe, to know in what part of the inteſtines the ulcer is ſituated; for if it be in the ſuperior inteſtines, the remedy is to be ſought for in medicines

which are to be taken by the mouth; but if the ulcer be in the inferior inteſtines, it will be moſt proper to have recourſe to glyſters. *De Locis Affectis*, *Lib. VI. Cap.* 2.

He expreſsly forbids bleeding in the dyſentery; and ſays, in *Comment. IV. Art* 98. *De Acutor. Morb. Victu*, "Fluente alvo ſanguinem non detrahes; nam ſi poſt detractionem perſeveret fluor, vires proſternit." In *Lib. I. Cap.* 15, ad GLAUCONEM, he makes the ſame objection againſt purging; he ſays, "Sed nec, ſi cum alvi profluvio febris fuerit, alia vacuatione eſt opus. Verum ipſum per ſe ſufficit, etiam ſi non ſit pro plenitudinis ratione. Quicunque enim ab iis, tanquam majori inanitione egentibus, vel ſanguinem ducere, vel ventrem movere auſi ſunt, in gravia pericula præcipitarunt."

In *Lib. X. De Simpl. Med. Facult.* 8. he recommends whey in glyſters, to abſterge and cleanſe the inteſtines, and to be taken inwardly. He ſays, when any thing of a drying nature is added to it, it is the beſt remedy in the dyſentery, and all acrid fluxes of the belly. This quality it acquires, he ſays, by being firſt boiled, and then having hot ſtones, καχληκες, quenched in it. He ſays milk is an excellent remedy

remedy in ſharp corroding fluxes; but that it ſhould be firſt boiled to conſume its ſerous parts: and adviſes farther, that it ſhould have hot irons quenched in it.

The anti-dyſenterical medicines of GALEN, as well as thoſe of his predeceſſors, contemporaries, and ſucceſſors, down to the ſixteenth century, were nearly all alike, and chiefly compoſed of the following articles:—

In glyſters they uſed, as detergents and aſtringents, arſenic, burnt paper, brine, lime, alum, ſea-water, wine, opium, &c. In aſſuaging and emollient glyſters, milk, wax, goat's fat, and the fat of other animals, flower, ſtarch, &c. With ſuch internals as galls, tormentil, acorns, cheſnuts, opium, cheeſe, ſaffron, alum, coagulum of animals, eggs boiled in vinegar, auſtere wine, aſtringent fruits, album græcum, burnt hartſhorn, earths, boiled milk, chalybeated milk, and milk with hot ſtones quenched in it; with external applications, cataplaſms, fomentations and baths.

The following ſpecimen of GALEN's formulæ, from *Lib. IX. Cap. 5, de Compoſ. Pharmac. ſecundum locos*, with the particulars already mentioned from DIOSCORIDES, may give an

adequate idea of the practice of thoſe times: and ſuperſede the neceſſity of repetitions from ſubſequent writers, many of whom have done nothing more than copy them, without the addition of a ſingle article of the ſmalleſt utility. If any farther information be required, reſpecting the formulæ of the ancients, it may be found in the collection made by NICHOLAS MYREPSUS.

Ad Dyſentericos, qua UTOR.

"℞ Gallæ, fructus ericæ, opij, ſingulorum drachmas quatuor; cum aqua redigito in paſtillos duorum obulorum. Dato ex aqua aut vino."

Ad Dyſentericos, Cæliacos, et Hæmoptoicos, è CORNELIO *Medico.*

"℞ Myrrhæ, thuris, aloes, croci, opij, rhois ſyriacæ et coriariæ, lycii Indici, acaciæ, malicorii, ſucci hypociſtidis, gallæ, balauſtiorum, ſingulorum par pondus; in paſtillos cogito; et ad noctem, febre carentibus ex vino, febricitantibus ex frigida, dato."

Infuſum,

Infuſum, quo UTOR.

" ℞ Chartæ uſtæ ʒxxx. Auripigmenti ʒxij. Gallæ ʒix. Calcis vivæ ʒxvi. Bituminis ʒxvi. Sulphuris vivi ʒxvi. Sandarachæ ʒxvi. Miſce."

Aliud, quo UTOR, GEMELLI.

" ℞ Auripigmenti ʒviii. Sandarachæ iiii. Calcis vivæ ʒviii. Squamæ æris ʒvi. Aluminis ſciſſi tantumdem, omphacii, ʒviii. Lycii Indici tantumdem, ſucci papaveris ʒiiii. Succi hypociſtidis tantundem, croci ʒii. Ego autem ʒiiii. Chartæ uſtæ ʒxx. Aliqui ʒxvi. Excipe vino myrtite; fac globulos, quorum ſinguli ſint ʒiiii. et trium. Infunde cum vino diluto."

GALEN ſays, it was a cuſtom in his time to give raw onions and bread, the patient drinking but little, and the next morning glyſters of the ſharpeſt pickle. This remedy, he ſays, brought on convulſions, faintings, and cold ſweats, and killed many people: but thoſe who ſurvived its violence, were ſpeedily cured by it. Here he gives us a proof of his excellent wit, as well as of that profound judgement for which he is ſo juſtly famed. He makes proper reflections on this ſort of practice, and

alſo points out the danger of the improper uſe of anodynes. *Method. Medend. Lib. XII. Cap.* 1.

ORIBASIUS, *Synopſ. Lib. I. Cap.* 19, recommends glyſters of ſea-water.

AETIUS, *Tetrab. III. Serm.* 1. *Cap.* 43. *et ſeq.* adviſes reſt and a ſpare diet; and rain-water for uſe, that has not been received by lead gutters, or ciſterns, as ſuch water cauſes dyſenteries. If rain water cannot be had, good ſpring-water muſt be uſed; but well-water ſhould be avoided, as it abounds with ſaline properties, which diſturb the bowels.

If the diſeaſe be cauſed by acrid food, or yellow bile, it is generally cured. And if black bile in the beginning be voided, which is diſcharged into the bowels, in conſequence of the ſolution of ſome fever, we muſt not deſpair of a cure; but if ſpontaneouſly, and without any fever preceding, black bile be voided, and no good concoction appearing, the dyſentery is incurable, as it does not differ from

from an ulcerated cancer, and is always mortal.

ANTILLUS relates, that a perſon having ſwallowed a gold ring in joke, voided ſhreds and bloody ſtools, cauſed by the aſperities of the ring cutting the inteſtines; but by boldly giving him ſtrong purgatives, he voided it by ſtool, and was well the third day.

AETIUS ſays, it is wonderful what good effects are produced by ſuch plaſters as are uſed to bleeding wounds, after the inflammation is abated, and ſuch as are uſed for fractures, applied round the whole belly and loins, to the back.

If the impetus of the blood be vehement, with great inflammation, and particularly in plethoric habits, bleeding muſt be performed, if the ſtrength will permit, and where any accuſtomed diſcharge of blood has been ſuppreſſed.

Much blood is not to be taken away at a time, nor ſuddenly; both diſturb the belly; and great care muſt be taken that the patient is not ſunk by it. The intention of bleeding is not for the quantity of blood, but as it were to transfer the humours to another channel. A little

little blood, therefore, and from a ſmall orifice, taken away ſlowly, mitigates the inflammation, cauſes a revulſion of the blood from the inteſtines, abates the inward heat gradually, and conduces to ſleep, rather than to ſink the patient; and ſleep is the beſt remedy for dyſenteric people.

When the ulcers are cancerous and malignant, what the Greeks call καχοηθης, the diſeaſe is generally incurable; but the beſt remedy to mitigate the pains is freſh aſs's milk drunk warm; and if the patient could bear the uſe of it, he ſhould take no other nouriſhment.

Marcellus Empiricus, *de Medicament. Lib. Cap.* 27, adviſes, puppies, ducks, and frogs to be applied to the belly, which, he ſays, will draw out the diſeaſe, and they will be killed by it, but the patient will be cured. He adviſes the belly of the patient to be anointed with bat's blood, and to give him human urine, and to put his legs in cold water, up to his knees, and drink very warm auſtere wine, which if there be no fever will ſpeedily cure him. He ſays, that *Glaſs* powdered very fine, and

and ſifted, with an equal quantity of maſtic, given in boiled wine for three days together, or longer, if there be occcaſion, is a wonderful remedy.

PAUL. ÆGINETA, *de Re Medica, Lib. III. Cap.* 42, ſays, a dyſentery is an ulceration of the inteſtines. When much blood is voided by itſelf, the diſeaſe is called a *bloody dyſentery*. When blood is voided that is blacker than its natural colour, and ſhining, the liver does not properly concoct the aliment that is diſtributed to it; and when alſo, from its debility, the diſcharges are like the waſhings of raw freſh meat, it is called an *hepatic dyſentery*. He adviſes, where there is great heat, the eating ſuccory, and the drinking cold water. He recommends rain-water for uſe. If the flux continue obſtinate, he adviſes a large ſponge to be wetted in ſome hot aſtringent wine, and to be applied to the whole of the ſuperior part of the belly.

ALEX. TRALLIANUS, in *Lib. VIII. Cap.* 8. *de Dyſenteria quæ Rheumatica dicitur*, ſays, he calls that a rheumatic dyſentery, which ariſes from the humours diſcharged from the meſaraic veſſels, and a reflux of the chyle; which being

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being mixed with the bile, cauſes an acrimony that excites the inteſtines to expel their contents. He ſays, if the diſeaſe continue long, it cauſes an ulceration of the inteſtines, which is properly called a dyſentery. He adviſes abſtinence, the firſt two days of the diſeaſe; and if the patient be young and ſtrong, and the ſeaſon permit, bleeding in the arm, and not a leſs quantity than two *heminas* (nearly twenty ounces) of blood is to be taken away. The cure afterwards was chiefly performed with milk.

He ſays, many unſkilful phyſicians do not heſitate to give medicines in the beginning of the diſeaſe, compoſed of opium, henbane, black poppy, or mandragora, to procure ſleep, and eaſe the pains. They are deceived from the patient's ſleeping all night, and the ſtools ceaſing; but when the morning returns, they find their labour is in vain; for the humours being collected, are now expelled without intermiſſion, with great heavineſs in the head, loſs of ſtrength, and an increaſe of the flux. Therefore ſuch medicines ſhould not be given without great neceſſity.

He

He condemns ſweet fruits, as they cauſe wind, and, from their humidity, eaſily generate acidity: but he adviſes aſtringent fruits*.

In *Cap.* 9, *de Inteſtinorum Ulceratione, quæ propriè Dyſenteria Græcis dicitur*, he ſays, the ancients called thoſe *dyſenteries* in which neither the liver nor any other part was affected, but only the inteſtines, with an ulceration. When the diſeaſe is in the upper inteſtines, the cure muſt be performed by medicines taken by the mouth. When it is in the lower inteſtines, or about the rectum, it muſt be cured by glyſters. Therefore it is firſt neceſſary to have a proper idea of the diſeaſe;—for he that knows a diſeaſe beſt, will beſt know how to cure it.

When the diſeaſe ariſes from an abundance of vicious humours, where the patient ſeems relieved by the ſtools, and where aſtringents have been uſed, and the purging increaſed afterwards, bleeding is not improper, and ſometimes purging. But when bleeding is performed, it ſhould be done gradually, at different times, and in ſmall quantities, that

* THEODOR. PRISCIAN is anotherauthor who terms the dyſentery an *ulceration of the bowels* with a *rheumatiſm.*

the patient's ſtrength may not ſuffer. The ſame precaution is neceſſary with reſpect to purging.

When the diſeaſe is in the rectum, with a teneſmus, he adviſes a moiſt vegetable diet, in order that a lax ſtate of the body may facilitate the expulſion of the fœces. He ſays, he knew ſome people that were abſolutely cured of the dyſentery by eating copiouſly of plumbs, by which means the ſtools paſſed with eaſe; and others by eating a large quantity of grapes.

He ſays, warm baths are uſeful in the beginning of the diſeaſe; particularly when drinking cold water, and a cold diet, have preceded the diſeaſe; or when there is a ſuſpicion of phlegm.

But care muſt be taken that the matter which is ſometimes diſcharged in the ſtools, coming from a corroſion in the bowels, be not miſtaken for phlegm and cold humour; which is often done by the ignorant.

In this diſeaſe he purged with ſcammony, and aloes;—his other remedies were like thoſe of his predeceſſors.

In

In *Cap. III. Lib. VIII. de Imbecillitate Jecoris et Dyſenteria*, he adviſes *Rheum Barbaricum*: which is the firſt inſtance among medical writers of the mentioning *Rhubarb*. He uſed it as a ſtrengthener, and not as a purgative:—"robur adjicere et confirmare."

AVICENNA, *Lib. III. Fen.* 16. *Tract.* 1 & 2. remarks in this diſeaſe, that ſometimes the inteſtines are perforated by the ulcers, and that the corruption eſcapes into the abdomen, and death enſues. He ſays, it is aſſerted that ſome who have had a perforation in the inferior inteſtines, have had an abſceſs formed in the belly; which being opened, the ſtools have been diſcharged there, and the patient has lived; but though ſuch a caſe may be poſſible, it is very improbable; and more ſo that the patient ſhould ſurvive it, and continue to void his excrements at the opening *.

A flux is often cauſed by acute diſeaſes, fevers, and tertians; and is often a criſis in theſe

* MATT. DE GRADIBUS, Part II. Pract 12. ſays, he ſaw a caſe of this ſort, where the patient voided his excrement at the wound, and lived for twenty years afterwards:—ſome other writers have mentioned ſimilar inſtances.

caſes;

caſes; but that fluxes coming ſuddenly after an acute diſeaſe, portend death.

He ſays, ſleep is of all things the moſt beneficial to people with fluxes, and recommends baths and frictions with warm oils, to open the pores, to bring the humours to the ſurface of the body.

Dry-cupping the belly, he ſays, has often removed fluxes and excoriations of the bowels, in four hours; and that he has himſelf experienced it.

His remedies are taken from GALEN and the Greek writers, and are chiefly compoſed of galls, earths, gums, aſtringent herbs and fruits, old cheeſe freed from its ſalt and toaſted, album græcum, coagulum of a kid or hare, ſtomach of an oſtrich dried and powdered, milk, with hot ſtones or irons quenched in it, eggs boiled in vinegar, opium, ſaffron, pepper, green vitriol, ginger, cheſnuts, acorns, gum arabic, whey, with cataplaſms, glyſters of butter and dragon's blood, &c.

He cautions againſt the uſe of narcotics, and ſays, that they ſhould be uſed in cataplaſms rather than in glyſters, and in glyſters rather than by the mouth. He adviſes rain-

water,

water in preparing the food; and drinking cold water.

Where there is a flux of blood, without an excoriation, that is obſtinate, he adviſes tight ligatures, and ſtrong frictions, to be applied to the hands; and the patient to be put into cold water, in the ſummer time, and into the cold air, in the winter; and that he ſhould drink cold water, and his drinks, &c. to be cooled in ſnow.

When there are ulcers and excoriations in the inteſtines, the humours are to be carefully evacuated by gentle purgatives. He ſays, *Rhubarb* is a wonderful remedy in ulcers of the inteſtines and fluxes, taken in plantain-water, with a little old wine.

FERNELIUS *de Morbis Peſtilentium, Cap.* 13. ſays, that the dyſentery raged over all Europe in the year 1538, and that ſcarcely any town was free from it:—without any known or apparent cauſe, from any particular ſtate, or change, in the atmoſphere.

J. HEURNIUS, in a note, *de Morb. Inteſtin. Lib. VI. Cap.* 10. FERNELII, ſays, that garlick, with ſugar and lemon-juice, was found to be a remedy, for people who had returned to Amſterdam from the Eaſt-Indies, afflicted with the dyſentery, from living on putrid food, in 1597. O. HEURNIUS mentions the ſame remedy for dyſenteries in long voyages.

FORRESTUS, *Lib. XXII. Obſ.* 31. *et ſeq. de Dyſenteria*, ſays, a young man was ſeized with a dyſentery from eating a great quantity of grapes without bread; and was cured by a glyſter. Another young man, in Paris, in 1545, from drinking freely of impure new wine, was attacked with a vehement diarrhœa, and the next day with a true dyſentery, and was cured by glyſters, one of which was compoſed of "eight ounces of cow's milk, in which hot ſtones had been often quenched; four ounces of plantain-juice, two ounces of oil of roſes, and the yolk of one egg," given cold.

He purged with rhubarb, in powder and infuſion alone; ſometimes myrobalans and tamarinds were added. He gave toaſted rhubarb often. He cured a man in 1583 of a dyſentery, by a doſe of toaſted rhubarb, and myrobalans, powdered, taken in a cup of beer. He ſometimes fomented the abdomen. He condemns the ancients, who gave ſalt water, and acrid glyſters, ſuch as had arſenic, lime, ſandarach, &c. in them.

He condemns the giving opiates, without the greateſt neceſſity.

He ſays, dyſenteries are ſometimes contagious and peſtilential; and that there was one ſo at *Delft*, in December, 1567; another in the winter, 1580, in which he gave gold filings pearls, bezoar, &c.

Hollerius, *de Dyſenteria*, *Cap.* 43, ſays, the cure conſiſts in bleeding, purging, lenient, detergent, and conſolidating glyſters, potions, and external remedies. He prefers rhubarb before all other purgatives, which is to be frequently repeated. In the beginning, he gave

only an infuſion of four ſcruples of rhubarb (more or leſs), in ſuccory, or ſome other ſimple water; with, ſometimes, a little ſyrup of dried roſes. In the progreſs of the diſeaſe, he added a ſcruple of the powder of rhubarb to the infuſion; and afterwards he gave toaſted rhubarb, as having an aſtringent quality; alſo a decoction of maſtich (two drams to a pint of water), with ſome wine; or rain-water, in which hot gold had been quenched. The cure was finiſhed with aſtringents, after proper evacuations to carry off the offending matter. He uſed the arſenical, and other acrid glyſters of the ancients; but recommends adding opium to them. He ſays, promoting ſweat, where the patient is ſtrong, with a bath, or ſteam, compoſed of ſudorific things, is very ſerviceable. He ſays, in the autumn of 1557, he cured all his patients with lenient glyſters, and rhubarb only; and did not loſe one among the many he attended. He mentions the caſe of a monk, in which black ſtools were voided, and the patient recovered.

DURETUS, *de Dyſenteria Annotat. Morb. Int.* HOLLERII, diſapproves of toaſting rhubarb. He adviſes a pint of warm oil of roſes, or a pint

pint of warm oil of almonds, with four ounces of the mucilage of quince-ſeed, for a glyſter, to alleviate the pains and inflammation: it is to be retained as long as poſſible. He diſapproves of glyſters compoſed of vitriol, auripigmentum, and cauſtic preparations. He ſays, a man had ſome arſenic applied to a tumor on his wriſt, by a ſurgeon, which cauſed his head to be affected, and he died in great miſery in two days.

Ballonius ſays, dyſenteries are either inteſtinal and meſenterical, or hepatical; and that it is abſurd to attribute all dyſenteries to the inteſtines. He ſays, the diſeaſe ought to be called *Tormina* rather than *Difficultas Inteſtinorum*. He adviſes purging, before the uſe of aſtringents, and when there is great heat, and when the ſtools are acrid and ſharp. He adviſes milk in glyſters, and ſays, that oily and anodyne glyſters are often hurtful. When purging is neceſſary, he recommends caſſia and tamarinds.

A flux ſuddenly ſtopped by rhubarb, occaſioned a tenſion of the abdomen; it was re-

moved by repeated bleedings. Diuretics and diluting are, in ſome caſes, beneficial, and, in ſome, hurtful; but, he ſays, their uſe has been much diſputed.

SEPTALIUS adviſes in the dyſentery, when purging is neceſſary (as in groſs habits, and when there is a bitter taſte in the mouth, and the ſtomach diſordered), rhubarb, myrobalans, tamarinds, manna, ſyrup of roſes, and ſuch mild purges, to evacuate the ſharp humours. He ſays, rhubarb cauſes great pain ſometimes, given alone, in ſubſtance; and that toaſting it moderately, contrary to the opinion of others, increaſes its purgative quality. When the pains are great, anodynes by the mouth and in glyſters, are recommended; but not too often repeated. Fat and unctuous glyſters are adviſable when the bowels are abraded; and abſtergent glyſters where the ulceration is ſordid and of long ſtanding. He forbids drying glyſters of arſenic, and ſuch things; and where acrid glyſters of pickle of olives, or lixivium of ſope, are given, that another ſhould be given immediately after, compoſed of oil of roſes, or ptiſan, or decoction of bran, with ſyrup of purſlain, and eggs, to alleviate the pain and

ſheath

ſheath the bowels. In order that the glyſters may be retained, he adviſes a flannel wrung out of an aſtringent decoction, to be applied and preſſed to the anus.

Botallus (Opera Omnia Ed. 1660) *de Curatione per Sanguinis Miſſionem*, diſregards the opinion of Galen, where he ſays bleeding ſhould not be performed on people "under the age of fourteen years, and paſt ſixty;" and contends for the utility of bleeding in the dyſentery, lientery, and diarrhœa. He gives ſome examples where the dyſentery was curèd by copious and repeated bleeding only; and others, where bleeding, and purges of infuſion of ſenna and ſyrup of roſes, completed the cure *. He ſays, his brother, then ſeventy years of age, had laboured under a palſy, and ſpaſmodic complaint, from his youth; and that during all that period there had ſcarcely ever paſſed a month, in which he had not been blooded once, twice, or even three times; and ſeldom in a leſs quantity than ten ounces, and often more than a pint †.

* Cap. 3. p. 136. et ſeq.
† Cap. 8. p. 184,

BOTALLUS was a great patron of blood-letting, and the firſt who introduced the frequent practice of it among the French, about the year 1580. He uſed it in peſtilential fevers, accompanied with exanthemata, and even after the appearance of ſwellings, "et aliis hujuſmodi abſceſſibus præmaturè prorumpentibus*". We find SYDENHAM quoting his authority in defence of his own, where he recommends copious and repeated bleeding in the plague. BOTALLUS bled in almoſt every diſeaſe, and ingeniouſly defended his practice. He approves of the ſentence of GALEN, "ſæpe ſpaſmum, hydropemque ſanguinis evacuatione ſum medicatus;" and recommends it alſo as preventive often againſt dropſies †.

PLATERUS *de Dejectione*, *Cap.* 11. recommends rhubarb as a purge before all others. He ſays, when rhubarb is toaſted, it leſſens its purgative quality; and if it be toaſted too much, it deſtroys all its virtues. At firſt it ſhould be given in powder, from half a dram to four or

* Cap. 5. p. 151.

† Cap. 15. p. 209.

five

five ſcruples; or in infuſion; if afterwards it is required to be more aſtringent, it may be toaſted a little. Bleeding is forbidden; and he admits of vomits only when the cauſe of the diſeaſe is in the ſtomach; ſudorifics, and diuretics, if the ſtrength will permit, and if nature incline to favour the operation of thoſe medicines.

The patient is to avoid acrid, ſaline, and particularly acid things; he is to be cupped on the abdomen; and to have his legs waſhed with a warm decoction of the ruſt of iron, ſteel-filings, and ſharp vinegar; and the vapour of it alſo to be applied to the anus. He has added to the farrago of the ancients, human bones, chalybeated water, earth-worms, medicated wine with iron or gold ſteeped or boiled in it; aſhes of a burnt hare; a quince, or pear, excavated and filled with wax, and roaſted, &c. He ſays the hæmorrhoides coming on moderately, relieves in this diſeaſe by derivation.

G. Fabricius Hildanus, *de Dyſenteria*, ſays, among the external cauſes of dyſenteries, a corrupt air is the moſt dangerous. That the dyſentery

dyſentery which raged at *Berne*, from 1601 to nearly the end of 1603, had this univerſal cauſe; and that there is no cauſe more univerſal, of health and ſickneſs, than good or bad air. That the air had been, before this dyſentery raged, loaded with vapours and exhalations, preceded by two earthquakes.

In 1592, during the dog-days, at a meeting of the great ſenate of *Berne*, their wine was put into copper veſſels, and ſuſpended in a cold well, in order to cool it. In a few days after they had drank it, the legates themſelves, and almoſt all the people who accompanied them, were attacked one after another, in the ſame manner, with a vehement pain in the belly, fever, and dyſentery; of which many died. One of them, whoſe name was *Willading*, and who eſcaped with great danger, whenever he drank his wine cooled afterwards in hot weather, was always attacked with pain and ſevere gripings, and ſometimes with a diarrhœa. So ſagacious is nature, ſays HILDANUS, that ſhe always abhors whatever has been injurious to her. He ſays, that he himſelf having been hurt by eating ſome poiſonous muſhrooms in his youth, could never uſe thoſe that were good afterwards, without nauſea, eructations, and pains in the ſtomach.

He

He ſays, he had a ſevere dyſentery himſelf, in May 1605, cauſed, by eating with a ſallad, ſome vinegar that had been kept in a veſſel lined with lead.

After the patient has been purged, vomits are ſtrongly recommended, compoſed of *Rain-water two pints*, *Honey three ounces*, boiled and deſpumated until one-third is conſumed: of this hydromel the patient is to take a cupful warm, with *two ounces of oil of Olives*, or of *freſh Butter*: and an hour and half afterwards, to provoke a vomiting, by introducing a feather, or the fingers, anointed with oil or butter, into the throat. If a ſtronger vomit be neceſſary, *Radiſh-root*, beat up with the hydromel and ſtrained, may be given. Half an ounce, or leſs, according to the age of the patient, of *Radiſh-ſeed* powdered, with the hydromel and oil, or butter, is an excellent vomit. Some give a dram of *Aſarabaca-root* as a vomit.

He adviſes bleeding, in ſmall quantities; or ligatures to the arms and legs; or cupping, to derive and turn the humours from the inteſtines;—alſo covering the patient in bed to cauſe a ſweat, but not in the beginning of the diſeaſe; there diuretics are to be uſed. His purge

purge was rhubarb, myrobalans, and michoacan. He commends nutmeg highly. He ſays fat broths, or butter, or oil of olives, or oil of almonds, is proper to be taken to alleviate the pains: particularly oil of unripe olives, to the quantity of three of four ounces, in ſome freſh meat broth, is to be given. He ſays, *Cap.* 7. that freſh butter mitigates the pains, and defends the inteſtines.

He mentions a caſe where the patient voided pieces of the ſubſtance of the inteſtines; and alſo ſuch worms as are found in rotten fleſh, which came from him involuntarily; but he recovered. *Cent.* 3. *Obſ.* 47.

He cautions thoſe in health not to go near the places where dyſenterical excrements are, for fear of infection; that the ſick ſhould have places by themſelves, and that ſome quicklime, or aſhes, ſhould be thrown in ſuch places; for thoſe excrements, he ſays, produce a peſtiferous exhalation, which immediately affects the bowels of thoſe in health, by ſome occult quality, which he had often obſerved, and that nobody ought to be ſurpriſed at; as thoſe who look on people with ophthalmias are immediately infected; and the ſheets in which people with the itch have ſlept infect others;

others; and an ulcer in the genital parts, firſt affects thoſe parts by contact; for that particular parts of the body have a certain ſympathy, and affinity, by which means a diſeaſe readily paſſes from one to another.

ZACUTUS LUSITANUS, *Praxis Hiſtoriarum, Lib. ult. No.* 6, adviſes, to divert the cauſe of the diſeaſe, frictions to the arms with dry cupping, and cupping with ſcarifications to the loins; and diuretics to cauſe a derivation by urine. He gives a form of pills compoſed of toaſted rhubarb and aſtringents, which, he ſays, have ſaved many from the jaws of death. He contends for the uſe of arſenic in glyſters, after RHAZES and AVICENNA, where the diſeaſe is inveterate. *De Dyſenteria, Hiſt.* 86. *Paraphraſis.*

SENNERTUS, *de Dyſenteria, Lib. III. Part.* 2. *Sect.* 2. *Cap.* 7. ſays, the dyſentery may be cauſed by acrid ſecretions; yellow bile; by black bile, which is mortal; by ſharp phlegm; by malignant, and ſuch humours as have a peculiar

culiar and ſecret quality, by which they affect and ulcerate the bowels. It may alſo be cauſed by eating autumnal fruits, particularly if they are unripe; by change of diet, and by food that is ſoon converted into ſharp and corroſive humours; by grapes, muſt, coloquintida, antimony, vinegar, and water kept in lead veſſels; by occult qualities in the atmoſphere; and by that influence of the ſtars, and the conſtitution of the air, which generate in our bodies, or communicate ſome diſpoſition to that end.

That the dyſentery is contagious; for, in that of the ſpring of 1624, which raged ſo violently after a long ſeries of heat, and uncommonly dry weather, one perſon was infected by another, and whole families were cut off by it. That the contagion of this diſeaſe is communicated by the excrement; which, as in all other contagious diſeaſes, being the excretion peculiar to the diſeaſe, is infectious. As in an opthalmia the diſcharge and effluvia of the diſeaſed eyes will infect people who look at them; and in a conſumption, the contagion of the breath from the diſeaſed lungs, is infectious. But in the dyſentery, where the maſs of blood is contaminated, and fevers are united with it, then not only the excrement of the ſick

ſick communicates the diſeaſe, but their breath alſo, and the exhalations from their bodies. And that the dyſenterical miaſma, in whatever mode and manner taken into the body, whether by the ſcent of the fœces, or by the lungs, œſophagus, or anus, creates a fermentation in the humours, and excites the bowels according to its own nature; conformably to the peculiar eſſence of all contagions and poiſons.

He mentions the various opinions concerning rhubarb, and ſays, it is a moſt uſeful and excellent medicine in the dyſentery. It ſhould ſometimes be given in ſubſtance, and ſometimes in infuſion, or decoction, or in extract; for that rhubarb has two properties; a ſubtle property, by which it purges; and a groſs property, by which it becomes an aſtringent. In a watery infuſion, decoction, or extract, its purging quality prevails; but in ſubſtance, it is more aſtringent. Therefore the infuſion, decoction, or extract, ſhould be given in the beginning of the diſeaſe, when purging is intended, and the ſubſtance, when it is intended to act as an aſtringent. When its aſtringency is to be increaſed, toaſting it will anſwer the end, by diminiſhing its purgative quality.

RIVERIUS,

RIVERIUS, *Cent.* 2. *Obſ.* 84. cured his wife of a dyſentery with opium only; and a purge, after the flux had ceaſed, of infuſion of rhubarb and myrobalans, with the addition of ſome of the powder of rhubarb, and ſyrup of roſes. *Cent.* 3. *Obſ.* 4. He gave his ſon ſal prunella in a dyſentery. *Cent.* 3. *Obſ.* 9. He cured a patient by giving him a dram of ſalt of vitriol diſſolved in water, which vomited him, and made a revulſion of the humours from the inteſtines. *Cent.* 4. *Obſ.* 79. He gave twelve grains of horizontal gold; it purged gently, and cured the patient; he repeated it twice afterwardss every third day. His general remedy was opium only; with purges of infuſion of rhubarb, with ſome of the powder, and ſyrup of roſes, at intervals.

BONTIUS, *de Dyſenteria, Cap.* 3. *Lib. II. & III. Obſ.* 4. *Hiſt. Nat. et Med.* ſays, the dyſentery cauſes greater devaſtation in the Indies, than any other malady whatever. He ſays, it is partly cauſed by the hot and moiſt air; and as

as a proof of the moiſture of the air at *Java*, and of the error that generally prevails among people, who ſuppoſe, from the proximity to the equator, it muſt be hot and dry, he ſays, that ſteel, iron, and braſs, ſooner contract ruſt and verdigreaſe, in the drieſt ſeaſon, when not a drop of rain falls there, than in the wetteſt autumn in Europe. It may alſo be cauſed by drinking too great a quantity of arrack; by eating too much fruit, as water-melons, cucumbers, jack-fruit, pine-apples, bananas, &c. without rice, bread, and ſalt; as in France and Spain, people who eat too many grapes, without bread, are immediately ſeized with a diarrhœa, or dyſentery.

He aſſerts, that diſeaſes in the Eaſt-Indies may be epidemical and peſtilential; and urges as a poſitive proof of it, that the dyſentery that raged at *Batavia* in 1628, was contagious, when that town was beſieged by the people of the iſland. He ſays, at that time the dead bodies being thrown into the river, corrupted the waters; and the air was likewiſe tainted by putrified carcaſes of men and beaſts, that died of famine and wounds, which lay unburied in the fields. Beſides, the water was vitiated by ſome thouſands of baſkets of ſerpentaria root, which the Indians ſteeped in the river, in order

to diveſt it of its poiſonous quality, and that glutinous ſubſtance, which, if we put the water wherein the root has been infuſed, into a glaſs for a few hours, we may obſerve fall to the bottom, like the white of an egg. They ate the root toaſted inſtead of rice, of which there was a ſcarcity in the camp. This will not appear ſtrange to thoſe who know that, in the Weſt-Indies, the root *Caſava* * is uſed inſtead of bread, although the expreſſed juice of the root is immediate poiſon. To this noxious diet, may be added the drinking brackiſh water, as the winds blowing from the ſea at ſtated periods, forced the ſea-water into the river, and made it ſalt. Moreover, the river ſwarmed with worms, that were generated in the bodies of the dead; the ſeaſon being the hotteſt, and moſt rainy in the whole year, from September to February, when the weather is conſtantly wet, and the ſun vertical.

As to the cure, he ſays, the common remedy was an infuſion of rhubarb in a decoction of tamarinds, to evacuate and attemperate the acrid fluids, as it is ſaid;—but, he ſays, this remedy was not only hurtful, but ſometimes

* This is the *Mandihoca* of Piso, and is deſcribed in the next article.

deſtructive,

deſtructive, as it cauſed much irritation and pain, when the acrid bile was extremely abundant; and that the great weakneſs in a dyſentery rather requires reſtoratives than purging; therefore, what he found by experience to be the moſt ſucceſsful practice, was a common drink made of a decoction of rice, with endive and ſuccory: adding likewiſe the harts-tongue, or phyllitis, which grows plentifully there, about the rivers.

But if the pain ſhould not admit of ſo ſlow a regimen, recourſe muſt be had to the extract of ſaffron; which he affirms to be a medicine equal in efficacy in the flux, to any that has ever been diſcovered; and that it is a moſt perfect antidote againſt this diſeaſe, even when of a malignant kind.

The fruits of the country are recommended; ſuch as mangoes, which are uſeful from their acidity and aſtringency; alſo ſyrup of the juice of freſh pomegranates; and the flowers of them preſerved, to ſtrengthen the bowels.

Piso, *de Dyſenteria, Lib. II. Cap.* 12. *Hiſt. Nat. et Med.* ſays, at the *Brazils* the dyſentery

ariſes from perſpiration being ſtopped by the cold night-winds; and from the immoderate uſe of fruit, and unwholeſome drinks, aſſiſted by the heat and moiſture of the air; but that it never appears like an epidemical, nor contagious diſeaſe. As to the cure, he ſays, rhubarb, and the mildeſt laxatives are ſometimes too irritating, and that the beſt medicine to procure evacuations with, is *Ipecacuanha*; of which, and its uſe, he ſpeaks in the following manner:

"Dehinc ad radicem ipecacuanhæ tanquam ad ſacram anchoram confugiendum, qua nullum præſtantius aut tutius, cum in hoc, tum in pleriſque aliis, cum, vel ſine ſanguine, fluxibus compeſcendis, natura excogitavit remedium. Quippe præterquam quod tuto et efficaciter tenaciſſimos quoſque humores per ipſam alvum, ſæpiſſime autem per vomitum ejiciat, et a parte affecta derivet, vim quoque aſtrictivam poſt ſe relinquit. Illud vero hoc modo perficitur: drachmæ duæ radicis ipecacuanhæ in ℥iv. liquoris appropriati coctæ, vel per noctem maceratæ, cujus infuſum cum vel ſine oxymellis ʒi exhibetur. Poſtridie ſemel atque iterum pro re nata, ſecunda imo tertia ejus decoctio repetenda; tam quod ægri debiliores eam facilius ferant, quam quod aſtrictioria ejus vis

vis tunc magis efficax appareat." *Lib. II. Cap. 9.*

He ſtrongly recommends gruel made of *Tipioca* *; and alſo emulſions of it, both by way of drink and glyſters. To take three or four drops of balſam capivi in the yolk of an egg; and the ſame quantity in the white of an egg, to be applied to the anus, externally, on ſome cotton, or to be uſed in a glyſter. Unripe *Bananas*, half roaſted, may be taken as an aſtringent food, or the fruit cut ſmall, and dried in the ſun, and made into a maſs, adding a little vinegar, which boiled, is to be uſed inſtead of bread. Conſerve, and rob of pomegranates, and other aſtringent and cooling ſimples of the country; as the *Araça Guajába*, *Mureçi*, *Murucujá*, *Inipápa*, *Acajú*.

* This is prepared from the root of the *Mandihoca* of PISO, which is the *Magnoc*, or *Maniboc* of the French, and the *Caſſuva* or *Caſſada* of our Weſt-Indies. This preparation of the Caſſada root is called *Tapioca*, in England. *Caſſada* is the *Iatropha* foliis palmatis, lobis lanceolatis integerrimis lævibus, LINNÆI, Spec. Plant. p. 1429. Ed. 1763. *Iatropha* foliis palmatis pentadactylibus, radice conico-oblongâ carne ſublacteâ, BROWNE, p. 349. *Ricinus* minor, viticis obtuſo folio, caule verrucoſo, flore pentapetalo albido, SLOANE, Cat. Plant, p. 41,

F. Deleboe Sylvius, *Praxeos Medicæ Appendix*, *Tract.* 10. *Sect.* 246. *& seq.* says, in a dysentery the inteſtines are corroded, and ulcerated from an acid humour; and therefore thoſe err, *toto cælo*, who attribute the cauſe of a dyſentery to bile alone, in whatever manner corrupted, and rendered acrid: for after the lixivial ſalt of the bile is rendered acrid, it excites a gangrene, as well in the bowels as elſewhere, but never an ulcer. It is therefore an ulcer of an acid, not of a lixivial effect. And unleſs an acid, and alſo an acrid humour, are joined to the bile, a dyſentery is never produced, which is only cauſed by a humour ſtrongly acid, and ſharp, being brought there.

The dyſentery of 1669, at *Leyden*, was owing to æruginous bile, corrupted by an acid acrimony.

The principal medicines are toaſted rhubarb, diaſcordium, theriaca, abſorbents, &c.

He ſays, if a teneſmus remains *in ano*, balſam of ſulphur prepared with oil of turpentine, amber,

amber, or anniſeed, applied to the part by itſelf, or mixed with other things, is an excellent remedy.

WILLIS, *Pharmac. Rational. Part.* 1. *Sect.* 3. *Cap.* 3. ſays, although the word *dyſentery*, in the common acceptation of it, ſignifies a bloody flux of the belly, as a diarrhœa doth that of the humours; yet he applies that name to the diſeaſe, even where it is not at all bloody. He ſays he has often and long ſince obſerved, that there are two different ſpecies of flux, which almoſt every year appear in London about autumn, and called, in our language, *the griping of the guts*; in one of which the ſtools are watery, and as it were clear, with a ſudden decay of ſtrength; in the other they are bloody, but the ſtrength remains tolerable. But while theſe fluxes prevail, the ſtools are rarely bilious or mucous.

He ſays, about the autumnal equinox of the year 1670, which had been preceded by an exceedingly hot and dry ſummer, many people were ſeized with a very ſevere and dangerous *Dyſenteria incruenta*. The diſeaſe came on ſuddenly, and often without any manifeſt cauſe,

and reduced the patients by violent vomitings, frequent ſtools, and thoſe watery ones, in a little time to great weakneſs, horrid faintings, and proſtration of ſtrength. Many who were well on the preceding day, were within twelve hours ſo reduced, by the tyranny of the diſeaſe, that they ſeemed ready to expire, with their pulſe weak and ſlender, a cold ſweat, and ſhort, laborious reſpiration: and many who had not proper remedies and aſſiſtance, died ſuddenly of it. This diſeaſe raged for a month, began to decreaſe about the middle of October, and before the firſt day of November almoſt intirely diſappeared.

In the cure of this dyſentery, he ſays, no evacuation did good: nay bleeding, purging, or vomiting, always did hurt. Only cordials, and thoſe of the hotteſt nature, and ſuch as abounded with ſpirit, and ſulphur, or a volatile ſalt, proved uſeful; inſomuch that brandy burnt a little with ſugar, was a popular, and as it were an epidemical remedy: though in the bloody dyſentery, being indiſcriminately uſed, it was often found to be injurious. Hot waters and ſpirits, treacle and mithridate, were the only kind of cordials found to be uſeful.

He

He ſays, this dyſentery was not contagious, and though it raged ſo ſeverely in London, it did not extend more than three miles diſtance from that city.

He ſays, the autumn of 1670 was ſucceeded by the coldeſt winter and hotteſt ſummer ever known, and that in the following autumn, 1671, there raged an epidemical fever, of the intermittent type, almoſt all over England. At the ſame time there was a ſevere bloody flux, *Dyſenteria cruenta*, that raged in London, by which many were carried off ſuddenly.

From the firſt attack of this diſeaſe, the patient generally had a pain in the belly, and gripings, voiding abundance of blood, and often, with continual watchings, fever, and intolerable thirſt, yet the ſtrength was not much impaired; and though the patient had ſometimes almoſt twenty ſtools a day for a week, he was able to riſe from his bed. Some voided caruncles, and pieces of the villous tunic of the inteſtines.

The bloody ſtools appeared terrible, yet the diſeaſe continued for weeks, and ſometimes blood was voided in great quantities every day for

for months, and at laſt, when the diſeaſe was in its worſt ſtate, the ſymptoms that preceded death, were watchfulneſs, roughneſs of the tongue and mouth, with thirſt; and ſometimes mortal *Apthæ* appeared. Where the flux had been ſuddenly ſtopped, theſe ſymptoms ſooner appeared, and denoted great danger.

Though this diſeaſe was epidemic, it was not equally malignant with all; in ſome it was milder, in others it appeared more violent.

The method of cure in the dyſentery, WILLIS ſays, is firſt to ſtop the flux gradually, or to moderate it. But that the indications are not to be proceeded on ſeverally, and ſucceſſively, but to be taken all together, and ſet upon at once. Therefore the remedies ſhould conſiſt of alexipharmics, ſtyptics, diaphoretics, and opiates. His chief medicines were Venice treacle, frequent doſes of laudanum, purges of infuſion of rhubarb and mirobalans, &c.

He ſays the dyſentery that commonly appears in London, is not uſually malignant; and although the ſtools are violent and bloody, and the diſeaſe generally of long duration, yet it is not very contagious, nor often mortal.

Sometimes

Sometimes indeed it is virulent, and, as it were peſtilential, deſtroys many, and ſpreads its miaſma widely, by contagion.

Sydenham, *de Dyſenteria partis anni* 1669, *atque integrum* 1670, 71, & 72, ſays, the dyſentery generally comes as the preſent one did, in the beginning of autumn, and goes off for a time upon the approach of winter; but when a ſeries of years are too much diſpoſed to produce it epidemically, it may ſeize a few at any other time, and many at the beginning of the ſpring, or perhaps earlier, if warm weather immediately ſucceed a ſevere froſt, terminated by a ſudden thaw.

In deſcribing the diſeaſe, he mentions *Apthæ* in the mouth as a mortal ſymptom. He ſays, when the diſeaſe proves laſting, the inteſtines at length ſeem to be affected ſucceſſively downwards, until it is driven to the rectum, and ends in a *Teneſmus*.

After having attentively conſidered the various ſymptoms attending a dyſentery, he ſays, he diſcovered it to be "*a Fever of its own kind, turned*

turned inwards upon the Inteſtines;" by which means the hot and ſharp humours in the blood, are there depoſited by the meſeraic arteries, and the mouths of thoſe veſſels are forced open by the impulſe of the blood, and the flux of the humours.

He ſays, the curative indications are, to make an immediate revulſion of the ſharp humours by bleeding; and afterwards to cool the remainder, and evacuate them by purgatives. He ſays, it is poſſible that there may be as many ſpecies of dyſentery, as there are of ſmall-pox; and confeſſes he does not know what ſimilitude there was between the dyſentery he treats of, and the endemical dyſentery of Ireland.

He began by bleeding, gave an opiate the ſame evening, and the next morning his uſual purging potion.

℞ *Tamarinds, half an ounce; leaves of Sena, two drams; Rhubarb, one dram and a half: boil them together in a ſufficient quantity of Water to leave three ounces of ſtrained liquor, in which diſſolve Manna, an ounce, and add ſyrup of Roſes, an ounce, for a purging potion.*

He

He gave an opiate early in the afternoon on the day of the purge. He repeated the purge twice, or more, every other day, with the opiate, on the intermediate days; the opiate he uſed was ſixteen or eighteen drops of his own *Liquid Laudanum* *, in ſome cordial water. After bleeding, and the firſt purge, he gave ſome mild cordial occaſionally throughout the diſeaſe; but chiefly in aged and phlegmatic perſons. The common drink was, *Milk boiled with thrice its quantity of Water*; or the *White Decoction* made of *burnt Hartſhorn, and the crumb of Bread, of each two ounces*; *boiled in three pints of Water to two*, and afterwards *ſweetened with a ſufficient quantity of fine Sugar*; and ſometimes poſſet-drink; or, when the loſs of ſpirits required it, he gave for common drink, cold, a liquor made by boiling *half a pint of Canary and a quart of ſpring Water together*. The diet was ſometimes panada, and ſometimes broth made of lean mutton. Aged people he kept more in bed, and allowed them a freer uſe of any cor-

* *Laudanum Liquidum* SYDENHAMI. ℞ Vini Hiſpanici ℔i Opij ʒi Croci ʒi Pulv. Cinnamomi et Caryophillorum ãā ʒi infundantur ſimul in B. M. per duos vel tres dies, donec liquor debitam conſiſtentiam adquirat.—Colatum ſervetur pro uſu.

dial

dial water they had been uſed to, than was proper for children or young people.

This method exceeded all thoſe he had hitherto experienced in conquering the diſeaſe, which generally yielded to the third purge.

But if it proved ſo obſtinate as not to give way to this treatment, he gave the former opiate every morning and evening, until it went quite off; or increaſed the doſe to twenty-five drops every eight hours, if the former doſe proved too weak to ſtop the flux. He alſo ordered a glyſter made of *half a pint of Milk, and an ounce and an half of Venice Treacle*, to be injected every day; he ſays, this glyſter is an admirable remedy in all kinds of looſeneſſes.

When the flux only amounted to a ſimple looſeneſs, he omitted bleeding, and gave a doſe of *Rhubarb*, every morning, made into a bolus with *Diaſcordium*, and two drops of *oil of Cinnamon*, with an opiate in the evening.

In the firſt ſeaſon of the dyſentery, when the diſeaſe was more ſubtle and ſpirituous, if the patient were young and feveriſh, he, in the beginning, directed bleeding; and an hour or two after, a large quantity of cold *Whey* to be taken

taken by way of diluting; and glyſters of the ſame, but warm, without the addition of ſugar, or any other ingredient. He always found the gripes and bloody ſtools go off, upon the diſcharge of the fourth glyſter. This buſineſs being over, and all the whey evacuated, which only took up two or three hours, the patient was immediately put to bed, when he ſoon fell into a ſpontaneous ſweat, which was ordered to be continued for twenty-four hours, but not provoked by medicine; allowing him nothing but warm milk, during the time, which he likewiſe uſed for three or four days after he left his bed. If a relapſe happened, either from riſing too ſoon, or leaving off the milk diet too ſoon, the ſame proceſs was repeated.

This mode, he obſerves, did not anſwer after the autumn of the year 1669, nor even in the cold weather of the ſame year; and in the following years it was of no uſe at all.

He ſays, that Dr. BUTLER uſed this diluting proceſs with the utmoſt ſucceſs at *Morocco* and *Tangiers*; and ſuggeſts, that it is reaſonable this method ſhould be attended with greater ſucceſs in hot climates than in England.

When

When the diſeaſe degenerates into a teneſmus, he ſays, it muſt be borne until the ſtrength can be recovered by a reſtorative diet, and the free uſe of ſome grateful cordial liquor: then the teneſmus will go off ſpontaneouſly, in the ſame degree as the ſtrength returns.

He ſays, he cured a perſon of a chronical dyſentery by repeated bleedings only; and obſerved, that her blood was like that of pleuritic perſons.

He ſays, alſo, that laudanum alone will cure ſlight dyſenteries, without any evacuations, at a time when the conſtitution has leſs tendency to the diſeaſe, than it had in thoſe years when it raged ſo epidemically.

BARBETTE, *Cap.* 5. *de Dyſenteria*, ſays, the diſeaſe is cauſed by too great an acrimony of the bile, and too much acidity of the pancreatic juice. Among the curative indications, he ſays, the dyſentery, "*qua Dyſenteria*," never indicates bleeding. The peccant humour is to be corrected, and evacuated, and the parts ſtrengthened. In the cure, three things only are

are neceſſary ;—purges, alterants, and topical applications. Every thing in the dyſentery is to be adminiſtered in ſmall quantities, whether drink, food, or medicine. Rhubarb is his principal purge :—with which, and opium and aſtringents, and anodyne, aſtringent, turpentine glyſters, and applications to the abdomen, he cured his patients.

He ſays, the widow *Van Aſperen*'s ſon, who was accuſtomed to drink ſpirituous liquors, was ſeized with a dyſentery, with violent pain ; and often voided to the quantity of two pounds of concreted blood, of a bright arterial colour. On opening his body after death, the ſmall inteſtines were here and there ſphacelated, their tunics eroded, and they were perforated in four places.

ETMULLERUS, *de Content. in Inteſt. Expulſ. Læſa, Cap.* 9. ſays, a benign dyſentery is generally without fever and contagion ; and that the cauſes of it are too great a corroſive quality of the pancreatic juice, by itſelf, or when it is not ſufficiently tempered by the bile ; autumnal fruits, grapes, muſt, &c.

A malignant dyſentery is generally united with fever, and ſometimes a peſtilential one; and rages epidemically through a whole region, and ſpreads itſelf by contagion.

He ſuppoſes it not only contagious from uſing the ſame place where dyſenteric people have been, but that uſing the ſame pipe in giving glyſters, that has been before uſed by dyſenteric people, will convey the infection; and refers to the opinion of HELIDÆUS PADOANUS*.

He ſays, the ſudorific tincture of bezoar was uſed with great ſucceſs in this diſeaſe; and that one who had a malignant dyſentery took ſeveral times twenty drops, and upwards, of the balſam of ſulphur, and cured himſelf by repeated ſweating.

He commends the virtues of the human ſkull bone, as a ſpecific in this diſeaſe; and ſays

* HELIDÆUS PADOANUS was an excellent phyſician, for the age in which he lived. He died at *Bologna*, in 1576. His obſervation here referred to is,—"eo malo ſæpius videas corripi, quibus clyſter infunditur, inſtrumento non bene abluto, quo antea dyſentericus uſus fuit; in ſedili etiam ſeu loco excretionis contagia veſtigii aliquando remanent." *Proceſſus, Curationes & Conſilia.* Pag. 104. Edit. WITTICHII, 1607.

our great BOYLE informed him, that a dram of the raſpings of it, in a powder, was to be given. He ſays, alſo, that the *Uſnea*, or moſs of the human ſkull, given in doſes from ſix to twelve grains, is ſaid to have wonderful effects: particularly if it be from the ſkull of one who has been hanged, or broken on the wheel, or any other way received a ſudden death. He ſays the *Sugar of Lead*, to ten grains, is a ſingular remedy, and ought to be much recommended: and that the *Tinctura Antiphthiſica* is an elegant medicine for all internal ulcerations whatever.

His general medicines were aſtringents and opiates; and, he ſays, purging medicines and glyſters are rarely to be uſed.

HOFFMAN ſays, the intentions of cure are, firſt, that the peccant, acrid, and cauſtic matter, of whatſoever kind, be corrected and carried through its proper emunctories; ſecondly, that the violent gripes and ſevere ſpaſms of the inteſtines be ſoothed and alleviated; and thirdly, that the inteſtines themſelves, when ulcerated or weakened, ſhould be relieved by proper and well-choſen remedies.

He recommends mild cathartics compoſed of whey, tamarinds, and rhubarb: but condemns the uſe of neutral ſalts; and ſuch ſweet purges, as prunes, ſena, manna, laxative ſyrups; and all acrid purges, as jalap, ſcammony, colloquintida; and wonders at BOYLE's recommending *Mercurius dulcis* in a dyſentery. He ſays, he was told by a phyſician who attended a camp, in curing a dyſentery, which raged there, upon the firſt ſuſpicion of contagion, and even when ſigns appeared pretty evidently, that an alexipharmic, prepared of calcined and philoſophically prepared hartſhorn, of diaphoretic antimony, of the volatile ſalt of hartſhorn, and ſaffron, of each ten grains, exhibited with a warm vehicle, produced excellent effects, by diſpoſing the body to ſweat: and after a repetition of four doſes, it checked the violence of the diſtemper.

But ſhould a great quantity of ſordes be lodged in the primæ viæ, he ſays, that a remedy of this kind may be much more ſafely uſed after the previous exhibition of a proper evacuant. It is a very common and fatal miſtake of phyſicians, when, in order to cure a violent dyſentery, they make an immediate uſe of alexipharmic and theriacal remedies, ſuch as diaſcordium, theriaca andromachi, mithridate, pulvis panonicus ruber, alexipharmic eſſences,

eſſences, and bezoardic tinctures; for he had frequently obſerved that the ſymptoms of an epidemical dyſentery had been exaſperated by too large an exhibition of ſuch hot and dry remedies; and that fevers, thirſt, and great heat within, have been occaſioned by the uſe of them.

Baglivi, *Prax. Med. Lib. I. Cap.* 9. ſays, moſt of thoſe who die of a dyſentery are killed by a ſphacelus of the inteſtines, which appears at leaſt three days before their death; for then the extreme parts begin to grow cold, the pulſe low and unequal, the pain and thirſt not ſo violent; and ſome are delirious a few hours before they die.

If a dyſenteric perſon be taken with a vomiting, it is a dangerous caſe. The hiccup is a mortal ſymptom, and ſo is the jaundice. A difficulty of ſwallowing is the forerunner of death.

In a mortal dyſentery, the ſtomach is affected as well as the inteſtines.

If a dyſenteric perſon be ſeized with an inflammation of the tongue and a difficulty of ſwallowing, there are no hopes left.

In the hæmorrhoides, the blood comes before the excrements,—in the dyſentery with, or after them.

If a dyſenteric perſon take opiates, and the day after appear of another colour in his eyes, he will ſcarcely recover; but if the colour of his eyes continue unaltered, it is a ſign he may recover. VALSCHMID.

Chewing of cinnamon, and ſwallowing the ſpittle, has cured ſome people.

In the cure of the dyſentery, the medicines ought to be few and ſimple; it is often cured with nothing but *Whey* given inwardly, and in glyſters. Several authors take this to be an *arcanum*. Sometimes the diſeaſe is inflamed by too many glyſters, injuring the ulcerated fibres of the inteſtines; therefore they ought to be given but ſeldom, and in a ſmall quantity.

Sweating coming upon a looſeneſs, ſtops it.

He ſays, the root of ipecacuanha is a ſpecific, and a remedy almoſt infallible in dyſenteric fluxes, and other hæmorrhages, colliquations of the humours, &c. Of this, he ſays, he was informed

informed by Dr. *Sherrard* in England, and had the ſame confirmed by Dr. *Mangetus* of Switzerland.

DEGNER, in his *Hiſtoria Medica de Dyſenteria Bilioſo-contagioſa*, which raged at *Nimeguen* in the autumn of 1736, ſays, the *dyſentery* made its appearance in July, but was preceded by a bilious *diarrhœa*, accompanied with vomitings and ſlight pains in the belly, which began in the month of April, and continued increaſing until the ſetting in of the bloody flux. The dyſentery increaſed in violence, until the middle of September, when it was at its ακμη, and had by that time ſpread itſelf unto the neighbouring villages, though confined until the end of Auguſt within the walls of the town. He ſays, the firſt perſon attacked was an officer of horſe, a young robuſt man; to whom he was called on the ſeventeenth of July, and who died on the twenty-fifth. He ſays, the calamity began from this young man, and ſpread itſelf from the houſe in *Paul's-Street*, where he was, to others in the ſame ſtreet; and thence over the whole town.

It began to decline towards the end of October, and towards the end of December intirely diſappeared in the town.

It is to be remarked, that the French people in the town were almoſt entirely free from its attack; two only, and thoſe old men, were ſeized with it: and the Jews entirely eſcaped. He ſays, this confirms the opinion, that one nation may be more obnoxious to contagious diſeaſes than another.

In the cure, he began with a vomit of ipecacuanha powder, and repeated it, if neceſſary, to the ſecond or third time. After the vomit of ipecacuanha, he purged with the watery tincture of rhubarb, or *Rolfinck's* tincture, made in the following manner:—take of *Rhubarb half an ounce, of ſalt of Tartar one dram, Succory water, or any diſtilled water, ſuch as Mint water, five or ſix ounces.* Of this mixture he gave half, or a whole ſpoonful, every four or ſix hours, to adults *.

* "Sed ego plura addo, atque affirmo Rheo ineſſe omnino aliquam virtutem ſpecificam, non quidem, ut alii volunt, in genere, in ſanandis omnibus dyſenteriis, et diarrhœis, cum vel ſine ſanguine, ſed ſpeciatim in diarrhœis et dyſenteriis aliiſque adfectibus bilioſis, in quibus ſuas vires efficaciter exſerit." Cap. 3. Sect. 32.

On

On this medicine, which he calls a *divine remedy* *, from the beginning he chiefly depended, which he repeated and continued, while evacuations were neceſſary. Afterwards he gave an ounce or two of a decoction of *Simaruba*, two drams in half a pint, every three or four hours, according to circumſtances, until the patient was cured. The effects of this medicine, he ſays, were more remarkable when the diſcharges were bloody, than when they were bilious. Sometimes he added a little ſyrup of white, or red poppies, to it. When more roborant and aſtringent medicines were required, he gave *Caſcarilla Bark*, and *Terra Japonica*. To aſſuage the pains and lubricate the bowels, he gave *Salab*, and preferred it to any other mucilaginous or gummous medicine.

He condemned bleeding in this dyſentery, and early opiates, aſtringents, and neutral ſalts, ſuch as *Tart. Vitriolat. Arcan. Duplic. Sal Prunellæ*, *&c.* and all mineral and metallic preparations, draſtic purges, and ſudorifics. Concerning the latter he pronounces the following ſentence: "*Sudorifera caute adhibenda ſunt*;

* "Divinum potius quam humanum remedium." Cap. 5. Sect. 15.

ſudor

ſudor enim arte prolectus minime eundem effectum ſalutarem habet, ac ſpontaneus, quo natura materiam humoribus inſinuatam aptè e corpore eliminare novit. Ars vero turbulenter ſæpius cocta et cruda ſimul et ſemel ad externa pellit, majoreſque in corpore turbas excitat, quid quod, ob inquietudinem ægrorum et ſedium numerum, vix debita in lecto continentia, ad tales ſudores artificiales obſervari, nec materia peccans per ſudorem ſatis eliminari poſſit." Cap. 5. Sect. 23.

CLEGHORN, in the dyſentery at *Minorca*, uſed *Ipecacuanha* and *Vitrum Antimonii Ceratum*, as evacuants. He ſays, of the latter he uſed to give from five to ten grains, early in the morning; of the former he directed ten, or fifteen grains, in powder, to be divided into three doſes, and to be taken in the forenoon, at the interval of two hours, or an hour and half between each doſe. The moſt common effect of both, was to procure a thorough evacuation upwards and downwards, during the day, and they often threw the patient into a ſweat the enſuing night.

But

But he ſays, he preferred the ipecacuanha, as being certain in its operation; whereas the other, ſometimes, did not produce the intended diſcharge; at other times occaſioned greater commotion than was expected. Nevertheleſs, he ſays, he muſt acknowledge, now and then, in deſperate bloody fluxes, he had known the antimonial medicine to be ſucceſsful, after every thing elſe had been tried to no purpoſe.

At firſt he repeated the above-mentioned evacuations every other day, for three or four times; and afterwards at longer intervals, with proper drinks, and a ſmall opiate at night.

But when the dyſentery began with horrors, rigors, fever, pain, &c. he confided principally in the antiphlogiſtic method, with bleeding plentifully, emollient glyſters, fomentations, and diluting drinks; avoiding opium as much as the intolerable torture of the diſtemper would permit.

When the fever was aſſuaged, he endeavoured to procure a ſufficient diſcharge by ſtool, with mild purgatives, ſuch as whey, weak broth, ſweet oil, ſolution of manna, cream of tartar,

tartar, &c. proceeding, by degrees, to the moſt active, till the end propoſed was obtained.

When other means failed, he gave ſix or ſeven grains of calomel, with a grain of opium at-night, after the uſe of the ſemicupium, and a purging apozem made of ſena, manna, and ſal catharticus, the next day.

In chronical dyſenteries he gave an opiate twice a day while the diſeaſe continued.

Huxham, *de Aëre et Morbis Epidemicis*, ſays, in the dyſentery in April, 1743, round worms were generally voided in the ſtools, even by adults and old people; that worms had been a more common complaint for many months before, than he ever remembered. He ſuppoſes this might have ariſen in conſequence of the great quantity of fruit with which the preceding ſummer and autumn abounded.

The diſeaſe was violent, and continued from the beginning of April to the end of May; particularly in the town and neighbourhood of *Plimpton*,

Plimpton, in Devonſhire. He ſuppoſes it might have been an epidemic fever, tranſlated to the inteſtines, as an epidemic dyſentery is not commonly a diſeaſe of the ſpring.

He often found good effects from *Calomel*, when the patient had worms: but generally began the cure with bleeding, and a vomit of ipecacuanha. He ſays, the inteſtines are generally inflamed in ſome degree or other, in this diſeaſe.

He ſays rhubarb (toaſted if Eaſt-Indian) is the beſt purgative in the dyſentery, given often, with a little nutmeg, or cinnamon. He ſays, there is no diſorder in which ſweetening, diluting drinks, are more neceſſary than in the dyſentery; that water alone has often done great ſervice; but that in the beginning of the diſeaſe it ſhould be given warm: and that, after the bowels had been cleanſed, he has frequently cured the diſeaſe with water, and a ſmall quantity of opium.

HILLARY, *on the Diſeaſes of Barbadoes*, ſays, the dyſentery may be truly ſaid to be endemial in hot climates, and that it appears in *Barba-*

does, more or leſs, every year. He ſuppoſes it to be infectious. In the cure he began with bleeding, then gave a vomit of ipecacuanha, and after its operation an anodyne, with toaſted rhubarb. Bleeding is to be repeated, if neceſſary: then ſmall doſes of ipecacuanha with theriaca, twice a day, and an anodyne after it has vomited the patient, once or twice, for three or four days.

But if the fever and inflammation be abated, or taken off, and yet bloody, or brine-like ſtools continue and are frequent, giving a doſe or two, and ſometimes a third doſe, of *Stibium Ceratum*, at proper diſtances after each other, and a ſuitable opiate a little time after the laſt, has been of great ſervice. But he obſerves, "that this medicine, how much ſoever it may be recommended and extolled by ſome perſons, though it may be a good medicine when properly timed, yet as it is frequently and promiſcuouſly given at all times of this diſeaſe, and in all circumſtances, by ſome perſons, it cannot ſucceed; for if the fever and inflammation are not firſt taken off, or conſiderably abated, it ſeldom, or never, anſwers their expectation. But theſe being taken off, or greatly abated,

abated, it ſometimes proves to be a good medicine; though I think I have ſeen the ipecacuanha, in ſmall doſes, anſwer much better*."

For the pain and ſoreneſs of the inteſtines, following the practice of TOWNE, he recommends balſam of Locatellus, anodynes and balſamics; and glyſters made of fat broth, milk, balſam of Locatellus, wax, ſpermaceti, elect. eſcord. theriac. androm. tinct. thebaic. When a teneſmus is kept up by indurated fœces, he adviſes purges to be given of manna and rhubarb, with a little ſal polychreſt and oil; and, if neceſſary, glyſters of warm water, honey, oil, and a ſmall quantity of ſope.

TISSOT, in his *Avis au Peuple ſur la Santé*, ſays the dyſentery is commonly epidemic, beginning ſometimes at the end of July, but oftener in Auguſt, aud ceaſes when the froſt fets in.

He ſays, the great remedy is an emetic; ſometimes a vomit of emetic tartar cures the diſeaſe, and always ſhortens it. A vomit of

* Page 214.

ipeca-

ipecacuanha is not leſs efficacious, and has been eſteemed for a great while as a certain ſpecific; but it is not that, though it is very uſeful. This remedy may be taken in the manner in which the Brazilians uſe it *. They infuſe two drams of *Ipecacuanha* in four ounces of hot water for a night, ſtrain the liquor, and take it in the morning faſting. They repeat for two days afterwards the ſame infuſion, made from the ſame root of which the firſt was made. The vomiting is moderate the firſt day; it is very gentle the ſecond, and more ſo on the third. The drink to be a ptiſan, made of a quart of barley-water, with two drams of cream of tartar diſſolved in it. The day after the vomit, the patient is to take a dram of rhubarb in two doſes; and the following day nothing but the ptiſan. On the fourth day, the rhubarb is to be repeated. This method generally ſubdues the force of the diſeaſe, but the patient muſt be kept for ſome time to a careful regimen.

Sometimes the dyſentery begins with an inflammatory fever, the pulſe hard, full, and violent pain in the head and loins, and the belly tenſe. In this caſe the patient ſhould

* Vide p. 324.

be

be blooded, and every day have three or four glyſters made of barley-water and mallow-flowers, or milk and water; and to drink plentifully of the ptiſan.

Vomits are not always neceſſary, and if the inflammatory ſymptoms have been conſiderable, the patient ſhould be purged with manna and Sedlitz ſalts, and not to uſe rhubarb but towards the end of the diſeaſe. He ſays, he cured many patients with only a cup of warm water, every quarter of an hour.

When the dyſentery is united with a putrid fever, after the vomit, the patient ſhould be purged with manna, tamarinds, and a ſmall quantity of nitre; or with tamarinds, and Sedlitz ſalts, and dram doſes of cream of tartar, before the rhubarb is given. Tamarind drink is alſo recommended, with dram doſes of cream of tartar. When a relapſe happens after ſeveral days, it is remedied by careful regimen, and a dram doſe of rhubarb.

When the dyſentery is united with an intermittent fever, the dyſentery is to be firſt cured; then the fever. But if the fever be violent, bark muſt be given at the ſame time.

He ſays, the prejudice againſt fruits in the dyſentery is erroneous, and pernicious: for though bad and unripe fruits may cauſe cholics, diarrhœas, conſtipations of the bowels, nervous complaints, and diſeaſes of the ſkin, they never are the cauſe of an epidemic dyſentery. But that ripe fruits of every ſort, particularly ſummer fruits, are a preſervative againſt this diſeaſe.

He ſays, he knew nine people out of eleven in a family, cured by eating fruit; but that the grandmother, and a favourite child, who did not eat fruit, but took burnt wine, oil, and ſpices, died:—

That in the neighbourhood of *Berne*, in 1750, when the dyſentery raged very much, ten out of eleven people in one houſe eſcaped it by eating a great quantity of plums. The coachman would not eat any, and was attacked in a very terrible manner:—

That a Swiſs regiment of ſoldiers in a garriſon in the South of France, had the dyſentery among them; the officers purchaſed the produce of ſeveral acres of a vineyard, and gave the ſoldiers the grapes, which cured all thoſe that were ill, and prevented any of the others from being attacked:

2 That

That a miniſter who ate three pounds of red currants in a morning, was cured of a dyſentery in two days.

If the corruption of humours, which creates malignant fevers, be united with the cauſes which produce a dyſentery, the dyſentery reſulting therefrom will be malignant; in which ipecacuanha is the principal remedy; firſt, as a vomit, and after a purge of rhubarb, in ſmall doſes, with chicken, or veal broth, and a little Rheniſh, or Vin de Grave; and it is of the greateſt importance to give it in the beginning, before all the inteſtinal humours are infected.

If there be a diſeaſe truly contagious, it is this, ſays Tissot. I have ſeen, ſays he within theſe few months, near the town, a terrible example of its infection. A young man arrived in a bad habit of body, from Holland, where he had been a ſoldier; and after a few weeks was attacked with a ſevere dyſentery, truly malignant, which, in a few hours, deſtroyed all his ſtrength. He refuſed any aſſiſtance, and during five days that the diſeaſe laſted, he went to ſtool in the barn, the kitchen, the garden, the rooms, and lay all night on the graſs, covered with the dew, by which con-

duct he infected ſix other perſons that compoſed the family; four of them were ſlightly attacked, but a man of ſixty years of age, and a boy of ten, periſhed. The boy took nothing, and died within ſixty hours: the father took ſome medicines in the beginning, and died in fourteen days. There was no dyſentery reigning in the neighbourhood at this period; the water uſed in the houſe was good; and upon the moſt attentive examination, he ſays, he could find no other cauſe for this infection, than the diſeaſe of the firſt perſon who was attacked.

Akenside *(de Dyſenteria Commentarius)* ſays, the dyſentery ought rarely to be claſſed among acute diſeaſes, or to be accompanied with any fever *. A doctrine, he ſays, different from that which the chief modern phyſicians have laid down. That ulcers are the effect, and not the cauſe of the diſeaſe. That the dyſentery is *a Rheumatiſm of the Inteſtines*; and like the rheumatiſm, or other articular diſeaſes, ſometimes contains a kind of fever within itſelf, or at leaſt is attended with one, but that it is fre-

* "—— eam perraro in morbis acutis reponi debere, aut febre ulla comitatam eſſe." P. 4.

quently

quently unattended with any fever, and much more ſo than the rheumatiſm. That the dyſentery in London, in 1760, 1761, and 1762, continued through the winter no leſs troubleſome than in autumn; a circumſtance, which, in his opinion, ſhews its cloſe connection with the rheumatiſm. That the diſeaſe ſeizes on the ſmaller inteſtines; then gradually deſcends to the rectum, according to the opinion of SYDENHAM. That it ſometimes ceaſes during menſtrual purgation, and returns when that period is over. That the imprudent uſe of opiates hath, by ſtopping a flux, brought on a dropſy. That it frequently happens, when people are freed from a dyſentery, they are ſeized with a pain in the ſhoulder, or in the ſide; ſometimes in the breaſt, arms, legs, or the integuments of the cranium. This pain is preceded by no rigor, nor ſigns of fever, for the diſeaſe is, plainly, reduced to a chronical rheumatiſm. That the dyſentery and rheumatiſm made frequent tranſitions from one to the other.

He contends that the matter and cauſe of both the dyſentery and rheumatiſm, are the ſame.

In the cure, he adviſes bleeding once, where there is great heat, ſhivering, and quick pulſe;

and though there ſhould be no fever, if the patient be of a plethoric and full habit of body; for this prevents any fever, and the rheumatiſm; which is ſo frequently ſubſequent to the dyſentery. It is alſo to be performed if the ſpaſms and gripings be ſevere; and in ſhort, it ought to be the firſt ſtep, unleſs ſome manifeſt ſymptoms diſſuade therefrom; ſuch as a lax habit of body, inclining to a dropſy, great debility, horror, cold ſweat, intermittent pulſe, and very fœtid ſtools.

After bleeding, which is not to be repeated, a vomit of ipecacuanha is to be given, unleſs the patient be too weak; and an hour or two after its operation is ended, he adviſes, as the only medicine neceſſary to the cure, "one grain of ipecacuanha, in a draught, compoſed of half an ounce of ſimple mint water, and two drams of ſpirituous mint water mixed together; or two ounces of ſimple alexiterial water, and half a dram of the cordial confection," every ſix hours. This was his practice in 1758. In 1759, he gave, "two grains of the ipecacuanha," but he found this doſe created too great a ſickneſs, and ſometimes vomiting, and then he returned to the "one grain doſes," ſo as to create a nauſea of the ſtomach. In this manner, for four years, he ſays,

ſays, he continued to give his patients ſmall doſes of ipecacuanha, and found by experience, that in all kinds of dyſenteries, whether acute or chronical; whether the ſtools were ſtreaked with blood, or conſiſted only of mucus; in every age, ſex, and conſtitution, and in all ſeaſons, that the medicine produced its ſalutary effect.

He ſuppoſes the ipecacuanha in ſmall doſes does not operate by ſweat, but, by rendering the belly ſoluble, it expels the humours that give riſe to the diſeaſe; and, by its antiſpaſmodic quality, relaxes the coats of the inteſtines, and ſo eaſes the gripings.

If after the patient is relieved from the dyſentery, he ſhould be attacked with the rheumatiſm in the ſhoulders, ſides, integuments of the head, arms, or legs,—antiſpaſmodic remedies, aud ſuch as increaſe perſpiration, are to be uſed; ſuch as caſtor, muſk, and valerian; or "the powder of ipecacuanha and Thebaic extract of each two grains; nitre and vitriolized tartar, of each eight grains;" this powder to be taken, and to drink plentifully of the decoction of barley, guaiacum, or liquorice; and to be repeated in ſix or ſeven hours, if it ſhould not produce a ſweat; cover-

ing the patient well with bed-clothes, and continuing the operation for ten or twelve hours. If the patient refuſe this method, or be too weak for it, bliſters are to be applied to the part wherever the pain attacks.

Brocklesby, in his *Medical Obſervations on Military Diſeaſes from* 1758 *to* 1763, ſays, "out of eight hundred men and women who were ill of a bilious fever and flux, upon the return of the troops to the Iſle of Wight, after an expedition and deſcents upon the coaſts of France, in the year 1758," he had a ſufficient number of inſtances, as well as in ſubſequent campaigns, to prove "ſome inconveniences from the aſtringent powers of rhubarb, and by too early checking the bilious evacuations. For many, who were treated in the uſual way, with rhubarb, joined with an opiate, immediately ſuffered delirious ramblings, or an increaſe of them, if they had any tendency to them before: they complained alſo of a tightneſs acroſs the cheſt, which called for immediate bleeding, though ſometimes the patient's ſtrength was already low, and much worn out."

For

For which reaſons he uſed as a purge, a mixture made by "*boiling two ounces of ſour Tamarinds in three pints of Barley-water to a quart: adding two ounces of Manna, and an ounce and half of tincture of Sena, with half an ounce or ſix drams of Glauber's ſalt.*" A ſufficient quantity of this was given, diluting with weak mutton-broth, and an opiate at night.

The aſtringent he uſed, after the fever was gone in the advanced ſtage of the diſeaſe, was made by boiling "*fine Engliſh Oak-bark, Pomegranate rind, and Tormentil root, of each an ounce, in ten pints of ſpring Water, till it was reduced to a gallon; adding, towards the end, two ounces of bruiſed Cinnamon, ſo as to boil half an hour; when the decoction grew cold, about a gallon was ſtrained off, and four ounces of ſtrong Cinnamon water were added, beſides two ounces of Gum Arabic, and a little Sugar.*" About the quantity of four ounces was ordered three or four times a day. This medicine was ſometimes aſſiſted by a large doſe of an opiate, and more powerful aſtringents, as the following electuary; "*take powder of red Roſe leaves, and of newly boiled mutton kidney Suet, of each four ounces, a dram of Locatellus's balſam, or about two ſcruples of Balſam Capivi: beat them up together*

gether into an electuary." The quantity of a large nutmeg of this, was prescribed three or four times a day, in a draught of the above drink.

Every night and morning a combination of "*two grains of Opium, with three grains of powdered Ipecacuanha made into pills,*" proved highly serviceable to many at this time of the disease. *red Port Wine*, diluted with water, with the addition of spices, is also recommended.

"If, after all, the flux still persisted; and if a tenesmus also attended the patient, then lenient purgatives, with *Salts*, *Manna*, *and sweet Oil*, were indispensably necessary again."

PRINGLE, in his *Observations on the Dysentery*, *Ed.* 1768, finds fault with SYDENHAM for including, as dysenteric cases, those diseases, while the dysentery raged in the autumn of 1669, where "several had no stools at all." But PRINGLE has taken only part of the sentence relative to that epidemic; for SYDENHAM adds, "but with respect to the severeness of the gripings, the violence of the fever, sud-

den

den loſs of ſtrength, and other ſymptoms, it much exceeded the dyſenteries of the following years."

He ſays alſo, that there are ſome ſubſtances *omitted* by SYDENHAM, which are ſometimes ſeen in the ſtools, viz. "round worms, balls of hardened excrements, and ſome ſmaller bodies, of the colour and conſiſtence of ſuet:" and that among other ſymptoms, SYDENHAM has *omitted* the "flatulence;" and that he neither mentions a "procidentia ani, nor a ſtrangury."

In theſe obſervations, PRINGLE does not appear to have known, that it was SYDENHAM's cuſtom, in treating of diſeaſes, invariably, to relate all the ſymptoms he ſaw, but no more: a cuſtom, I ſuſpect, "more honoured in the breach than the obſervance," by many of his ſucceſſors. Beſides, from his well-known accuracy, as well as veracity, it is moſt probable he *omitted* nothing; but that none of theſe circumſtances (the firſt having no relation to the dyſentery, and the laſt undoubtedly often the effect of miſmanagement) were ſeen in the epidemic in queſtion, as neither he, nor WILLIS, mentions them. Here I again diſſent from the notion, that *Strangury* and *ſuppreſſion*

of

of urine, are genuine pathognomonics of the dyſentery. I am ſenſible that in the dyſentery, whenever the ſtools are copious and liquid, particularly in the *Dyſenteria incruenta*, there may be but a very ſmall quantity of urine voided: for how ſhould it be otherwiſe when there is but little ſecreted, by all the fluids of the body being turned from their natural channels, and running off at the inteſtines?

This paucity, or deficiency of urine, DEGNER incorrectly calls a *ſuppreſſion of urine* *; and I perceive it has been by ſeveral writers after CÆLIUS AURELIANUS†, miſtaken and miſnamed in the ſame manner.

Strangury and *Iſchuria*, or *ſuppreſſion of urine*, are abſolutely adventitious in the dyſentery; and almoſt unknown where the too early and injudicious adminiſtration of opiates, or heating, or acrimonious, or aſtringent medicines (but particularly opiates), has not previouſly taken place. This I believe to be the reaſon,

* *Urina* plerumque plane erat *ſupreſſa*, ut intra ſex, octo, decem, aut quatuordecim dies vix guttam emitterent.—In aliis vero ſtatim cum morbi adſultu aderat *Stranguria* moleſta. DEGNER. *de Dyſent.* p. 18.

† Impedimentum urinæ reddendæ. C. AUREL. *Lib.* IV. *Cap.* 6.

that

that thoſe we eſteem the moſt accurate medical writers, have never mentioned theſe as ſymptoms. DEGNER's patients might have made no urine for ſeveral days, for that is natural in the dyſentery, but a ſuppreſſion of urine is not. If ſuppreſſion of urine occurred, I make no heſitation to charge it to his practice, in the courſe of the diſeaſe, or to ſome injudicious treatment before he ſaw the patient; and that a ſtrangury occurring, "cum morbi adſultu," is not a legitimate relative of the dyſentery.

PRINGLE ſays, "SYDENHAM takes no notice of any contagion that attended his epidemic; and that WILLIS expreſsly ſays, that the dyſentery which he deſcribes, and which was the ſame as SYDENHAM's, was not infectious. But all that we can thence infer is, that either the diſtemper, which they ſaw, was of a *milder nature* than it uſually is when it becomes general, or that this circumſtance of infection *eſcaped their notice*."—From this very extraordinary remark, one would ſuppoſe PRINGLE had never read Willis's account of the uncommon ſeverity of that epidemic; and it is evident that SYDENHAM's minuteneſs in following facts, in which nothing eſcaped him, had no weight with PRINGLE, bewildered by an hypotheſis.

He

He obſerves, that SYDENHAM was *defective* in that part of the hiſtory of this diſeaſe, which relates to diſſections. But PRINGLE ſhould have recollected that SYDENHAM found out a method of treating the dyſentery ſucceſsfully; which deprived him of thoſe fertile opportunities of making experiments on dead bodies, that have ſo often fallen to the ſhare of many other people. I do not mean by this to ſay, that he never loſt a patient, but to urge the probability of it; as he ſays, from the method he purſued, "the diſeaſe generally yielded to the third purge."

He ſays, "SYDENHAM, in the hiſtory of the epidemic dyſentery of his time, takes no notice of the weather; going, I muſt ſay, upon a *falſe principle*, that the morbid conſtitution of the ſeaſon has never any connection with the ſenſible qualities of the air. But that WILLIS ſupplies this defect, &c." How far the whole of this remark is erroneous (admitting PRINGLE's authority, that SYDENHAM went on a *falſe principle*,) on the preſent occaſion, whatever might have been SYDENHAM's general doctrine, may be ſeen by referring to SYDENHAM himſelf *.

* Vide p. 331.

He

He ſays, "That at firſt ſight SYDENHAM ſeems to have expreſſed himſelf juſtly when he called a flux, *the Fever of the ſeaſon turned upon the Bowels.* But upon a nearer view, we ſhall find this notion more acute than ſolid, ſince the circumſtance of its being contagious ſhews that the dyſentery is eſſentially different from theſe fevers."—By this obſervation PRINGLE ſuppoſes what I fancy no other perſon does; —that dyſenteries are always infectious;—or that fevers never are;—or that epidemic dyſenteries are infectious, when epidemic fevers are not.

He ſays, he has known no ſuch progreſſion as SYDENHAM ſpeaks of, "the inteſtines being ſucceſſively affected downwards, till at laſt the diſeaſe be driven to the rectum, and ends in a *Teneſmus*."—But as every perſon elſe has known this progreſſion, who has had much practice in epidemic dyſenteries of long duration, it is remarkable that it ſhould have eſcaped PRINGLE's notice.

He ſays, "DEGNER offers good reaſons for believing that the fatal dyſentery at Nimeguen, was owing to the infection communicated by one perſon."—But to me, thoſe which PRINGLE calls

calls "good reaſons," are very bad ones, and like all reaſons that I have hitherto met with on the ſame ſubject; for I conſider that the diſeaſe which appeared in the beginning of April, as a *Bilious Diarrhœa*, and continued through May and June, was aggravated into a dyſentery in July, when the heat of ſummer had increaſed, and the uſual dyſenteric ſeaſon had advanced: for it came in as epidemic dyſenteries in Europe generally do, at the end of ſummer, then raged in autumn, and declined at the ſetting in of the cold weather.

He ſays, "in camp the contagion paſſes from one who is ill, to his companions in the ſame tent, and thence perhaps to the next. The foul ſtraw becomes infectious, but the great ſource of infection ſeems to be the privies. The hoſpitals likewiſe ſpread it, for thoſe who are admitted with the flux, not only give it to the reſt of the patients, but to the nurſes and other attendants of the ſick."

But, ſays he, "of what nature is this infection? I conſidered the ſpreading of the diſtemper (formerly) as owing to putrid exhalations from the humours of thoſe who fall firſt ill of it; and when this miaſma is received into the blood, I conceived it to act upon the whole maſs

maſs as a ferment, diſpoſing it to putrefaction. But I am now ſenſible that this *hypotheſis* would be inſufficient, without proving at the ſame time, that when the blood is thus tainted, the vitiated part of it, by a certain law in the animal œconomy, muſt be thrown upon the inteſtines for excretion. This notion of a putrid ferment received ſome confirmation from a caſe which occurred, of one who was ſeized, indeed in a ſlight degree, with a dyſentery accompanied with bloody ſtools, in making experiments upon human blood, which had become putrid by ſtanding ſome months in a cloſe phial. This caſe ſeemed to be more deciſive, as it happened at a time when the diſtemper was not heard of, and to a perſon in perfect health, who had formerly attended many dyſenteric patients without being infected."

"For theſe reaſons, I was inclined to refer the *cauſa proxima*, or the immediate cauſe of the diſeaſe, to this putrid ferment; but having ſince peruſed a curious diſſertation publiſhed by LINNÆUS *, in favour of KIRCHER's ſyſtem of contagion by *animalcula*, I think it reaſonable to ſuſpend all hypotheſis till the matter ſhall be further inquired into."

* Amœnit. Academ. Vol. V. Diſſert. 82.

He ſays, in the beginning of his practice in the army, he uſed *Vitrum Ceratum Antimonii*, which he had formerly obſerved to be the beſt medicine in this caſe, for relieving both the ſtomach and bowels; yet the roughneſs of its operation, and the prejudice conceived againſt the glaſs of antimony as a medicine, having deterred other phyſicians of the army, and the regimental ſurgeons from uſing it, he alſo deſiſted. Inſtead therefore of this preparation, he gave ipecacuanha with, or without, emetic tartar, ſo as to excite an operation downwards, which he found moſt certain when he gave only five grains of ipecacuanha, and repeated it at an hour's diſtance, twice, or thrice, until the next day, if the patient had only been vomited by the ipecacuanha, or ſparingly purged with rhubarb and calomel; after the purge an opiate at night, with two or three grains of ipecacuanha. The purge of ipecacuanha, or rhubarb and calomel, to be repeated on the fourth day. The firſt ſtage of the diſeaſe being paſt, he purſued the uſual track, with opiates, balſamics, and aſtringents.

I cannot cloſe the preſent detail, without obſerving that PRINGLE conceiving "SYDENHAM's account of the dyſentery, to be upon the whole

ſo

ſo juſt," he thought it neceſſary to make only "a few obſervations to aſcertain ſome points which he, SYDENHAM, has left doubtful; and to add ſome others, for rendering the hiſtory of the diſeaſe more complete."

It was therefore in juſtice to PRINGLE that I have ſelected thoſe paſſages, which he thought were the conſummation of his undertaking; that he might loſe no credit, due to an attempt to correct the irreproachable accuracy, and to aſſiſt the incomparable genius of SYDENHAM.

BAKER, *de Dyſenteria Londinenſi*, *An.* 1762, ſays, an epidemic dyſentery appeared in London towards the end of July 1762. It was preceded by very hot and dry weather. It raged all the autumn, until November.

He remarks, that thoſe people who ate much ſummer, or autumnal fruit, were exempt from the diſeaſe, or had it mildly.

He generally gave a vomit in the beginning of the diſeaſe, and preferred emetic tartar,

which, he ſays, not only cleanſed the ſtomach from a wonderful quantity of yellow and green matter, and relieved the patient, but it excited afterwards a general perſpiration over the whole body. He found that ipecacuanha did not cauſe ſufficient ſtimulus: and diſapproves of it, for the very reaſon for which Piso commends it, as leaving an aſtringency after its operation;—"vim quoque aſtrictivam poſt ſe relinquit."

He ſays, he knows no virtue in ipecacuanha for the dyſentery, beſides its emetic quality, and in that, it is inferior to emetic tartar:—and if, according to Freind, ipecacuanha be uſeful in the dyſentery, from cauſing perſpiration, it is inferior to emetic tartar even in that.

He ſays, emetic tartar, after its emetic effects have ceaſed, operates downwards, and cleanſes the inteſtines: and he ſuppoſes the *Vitrum Antimonii Ceratum* owed its reputation as an anti-dyſenteric medicine, to its emetic and purgative operations *.

* My opinion of the effects of this medicine, is mentioned in the Second Part of this Treatiſe.

He

He condemns rhubarb as a purgative, particularly in the beginning of the diſeaſe; and adviſes where ſuch mild aperients as ſena, manna, and tamarinds do not relieve, recourſe to be had to more active medicines, and before all others to the *Sal Catharticus Amarus*.

He diſapproves of rhubarb when mixed with calomel in the dyſentery; and much more when nutmeg, cinnamon, and other ſpices are added to it.

He condemns heating medicines; and in the courſe of the diſeaſe adviſes ſuch things as almond emulſion, white of eggs, ſtarch, ſalab, &c.; and in the decline of it, milk with ſome freſh ſuet boiled in it, and a little ſtarch.

He ſays, the Iriſh common people take melted butter in the dyſentery; and that among the Engliſh ſome people have taken a ſpoonful, or two of it now and then, and have been cured by it.

He ſays, the dyſentery in 1762 was ſpread by contagion among the common people, from uncleanlineſs.

He cautions againſt the premature and improper uſe of opiates; and inſtances a caſe where warm bathing was uſeful.

In this elegantly-written treatiſe, the general ſymptoms of the diſeaſe, and the particular epidemic of 1762, are accurately related. It contains alſo proper diſcrimination reſpecting bleeding, recommends the rejection of rhubarb, with many other therapeutical principles, to be regarded in general practice; particularly uſeful where formidable dyſenteries prevail, as in hot climates.

But this learned phyſician's opinion of the utility of fruit, is leſs applicable in thoſe climates; and in reſpect to the "difficultas urinæ *," it is unneceſſary to repeat my ſentiments, but I will add thoſe of HIPPOCRATES. He ſays, in a ſeaſon when *(incruentous)* dyſenteries prevailed, with great diſcharges of a bilious, thin, acrid, and watery nature,—πολλιοσι ται και περιρροιαι μετα πονε χολωδεες, ὑδατωδεες, ξυσματωδεες, πυωδεες, σραγγουριωδεες· ου νεφριτικαι αλλα τουτεοισιν, αλλα αντ' αλλων †.

* Opuſcul. Med. p. 38.

† Epidemiorum Lib. I. Sect. 2. Art., 7, & 8.

MONRO,

MONRO, in his *Account of the Diſeaſes in the Military Hoſpitals in Germany, from January 1761, to March 1763, ſays*, "it is now generally agreed that this diſorder is entirely produced by ſuch cauſes as make the juices become too putreſcent, and turn the flow of humours to the bowels; and in the camp it ſeemed to ariſe principally from obſtructed perſpiration, cauſed by the men's lying in the field, and doing military duty in all ſorts of weather; at the ſame time being often expoſed to the putrid ſteams of dead horſes, of the privies, and of other animal or vegetable ſubſtances, after their juices had been highly exalted by the heat of ſummer."

He does not ſuppoſe fruit to be among the cauſes of this diſeaſe, and ſays, "generally in Auguſt and September we have people admitted into St. George's Hoſpital for the dyſentery, who have certainly not catched the diſorder from eating fruit."

He ſays, "moſt authors who treat of the dyſentery, mention the ſymptom of worms*."

* It does not occur to me that many authors have mentioned even the voiding worms in this diſeaſe; and ſurely thoſe

In the cure, when the patients were young and ſtrong, and complained of ſharp pains of the bowels, attended with a fever, he uſed the lancet freely; nor was he diſcouraged from bleeding in the beginning by low quick pulſe, which often attended the diſorder: and he frequently found the pulſe to riſe as the blood flowed from the vein.

A vomit of ipecacuanha, ſometimes with the addition of emetic tartar, was given after bleeding, which was repeated in the courſe of the diſeaſe if the ſickneſs returned, and the flux were obſtinate.

On the following day a purge was given, but as rhubarb, on repeated trials, did not anſwer, he ſays, he gave "*Sal Catharticum Amarum, with Manna and Oil,*" which was repeated every ſecond or third day, with an opiate at night.

He ſays, "the *Vitrum Ceratum Antimonii* proved often too rough a medicine, and therefore we laid it almoſt intirely aſide."

thoſe who have never meant to conſider them as a dyſenteric *ſymptom*:—to which they have no more relation, than to the ſmall-pox, or meaſles.

In

In the progreſs of the diſeaſe, he ſays, a ſpoonful of the *Mixtura Fracaſtorii*, taken after every looſe ſtool, and an anodyne draught at night, had a good effect with ſome—repeated doſes of the *Philonium Londinenſe* anſwered better with others—and others found more benefit from the *Mindereri* draughts, with *Mithridate*, or the *Confectio Cardiaca*, or the *Theriac* anodyne boluſes. The *Mixtura Campechenſis*, both alone and with *Tinctura Thebaica*, checked the purging, and gave relief ſometimes; and the addition of ſome extract of bark, and tincture of cinnamon, ſeemed to increaſe its efficacy in two old caſes; but it afterwards occaſioned ſuch ſickneſs, that its uſe was diſcontinued.

In other inveterate dyſenteries, he added a ſmall portion of alum to the logwood julep, which, as well as equal parts of diaſcordium electuary, and electuary of bark, taken to the quantity of a dram twice or thrice a day, was uſeful in many old fluxes, but ſometimes otherwiſe.

He ſays, repeated ſmall doſes of ipecacuanha did not anſwer; nor did ipecacuanha mixed with opium, often produce any remarkable change for the better. Purges were given from

from time to time, during the uſe of aſtringent remedies.

Pouppe' Desportes, in his *Hiſtoire des Maladies de Saint Domingue*, ſays, that in the treatment of the dyſentery he uſed emollient glyſters of decoction of tripe and plantain, with ſome buds of the *Monbin* (hog plum tree), and of the *Grand Couſin* *. He purged the patient with tamarinds, mirobalans, and manna, in whey; ſometimes adding ſyrup made of ſuctory and rhubarb. If the diſeaſe continued, he had recourſe to laudanum, *Caſhew gum*, and to amber, mixed up with ſyrup. He gave alſo a ptiſan made of *Bois Marie* (anchovie pear tree), *Bois de chandelle* (white candle wood, or roſe wood), the tops of *Apiaba*, *ou Herbe quarrée* (Indian ſpikenard), *Maïs* parched (Indian corn), of each of theſe a very ſmall handful, boiled in a quart of water, until a fourth part was conſumed. When the patient began to recover, he put him on the uſe of a pottage made of *Gombo* (okra). Sometimes the diſeaſe terminated in an abſceſs in ſome of the viſcera. When it was formed in the convex part of the

* Agrimonia of Sloane, Triumfetta of Plukenet, Bur-Bark of Browne.

liver, it was cured by opening it, and with more ſucceſs there, than in France.

Poisonnier Desperrieres, *Traité ſur les Maladies des Gens de Mer*, ſays, the dyſentery is a common diſeaſe among ſeamen. It comes like a diarrhœa, without pain, or teneſmus that gives any inquietude, for the firſt few days; and without fever: then ſucceed pains, bloody and fœtid ſtools, and fever.

The cauſe of this diſorder, he ſays, is the ſame, as of almoſt all the diſorders of ſeamen: an acrid humour following a ſuppreſſion of perſpiration, which in the dyſentery is carried to the inteſtines.

He ſays, it attacks chiefly thoſe of ſtrong habits; for which reaſon people unuſed to the ſea, and crews of ſhips ſoon after their leaving a port, where their vigour has been recruited, are moſt obnoxious to it. It is alſo cauſed by a quick paſſage from a temperate to a northern climate: and from north winds ſucceeding ſouth winds, after cold rains.

Sea-

Seamen, he ſays, quitting their work, wet with rain, and with ſweat, lie down in the open air, with their wet clothes on, or throw themſelves into an hammock, badly covered, and ſleep in that ſtate; which, he ſays, never ſhould be ſuffered on-board a ſhip.

He ſays, in cold weather, and in the north ſeas, ſeamen ſhould have, inſtead of ſpirits, punch, wine, beer, or cider, as fermented liquors are proper to keep up perſpiration, and aſſiſt digeſtion; which with ſleeping dry, and being well covered at nights, will prevent diſeaſes at ſea, and extinguiſh a dyſenteric diſpoſition.

He ſays, officers, and ſuch as are provided with neceſſaries, to guard againſt cold and moiſture, are leſs affected than the common men, with diſeaſes at ſea.

In the cure, he ſays, in the beginning, when the diarrhœa comes on, it is neceſſary to evacuate the humours, by a vomit of ipecacuanha, which is to be repeated, according to circumſtances, in the courſe of the diſeaſe, uſing no other aliment than broth, gruel, and rice; with ſometimes the addition of a little ſaffron, or

cinnamon. Where the pains are great, and the ſtools become bloody, bleeding is ſometimes neceſſary: giving a ptiſan of viper-graſs root, ſarſaparilla, and pearl barley. A purge is then to be given of rhubarb, tamarinds, and manna. The patient is to be kept well covered in bed, and not ſuffered to walk about bare-footed; and the hatchways are to be kept ſhut near his bed.

A dram of diaſcordium is to be given every night, for ſome time, at bed-time, and frictions with dry flannels are to be uſed, and bottles with hot water applied to the body, to excite a gentle heat, and produce perſpiration; emollient glyſters are to be uſed; balſam of Locatellus, with ſome earths, are to be given, but not ſuch abſorbents, as may ſtop the excretions ſuddenly *.

ZIMMERMAN, in his Treatiſe on the Dyſentery, ſays, that there was an epidemical dyſentery in ſeveral parts of Switzerland, in the autumn of 1765, which was preceded and accompanied by a bilious putrid fever. This dyſentery was cured with a drink made of barley-

* This account of POISSONNIER's is chiefly taken from ROUPPE's *Morbi Navigantium*: but as it is ſomewhat an improvement on ROUPPE, I have given it the preference.

water

water and cream of tartar; ſmall doſes of cream of tartar and rhubarb; purges of tamarinds, &c. He is an advocate for fruit, particularly grapes in the dyſentery, and follows a practice he has collected from modern writers on the dyſentery, particularly from the celebrated TISSOT.

He relates, as an important diſcovery by Dr. *Moehrlin*, for obtunding the acrimony of ſix or eight grain doſes of the vitrum antimonii ceratum, that *three or four grains of Marſh-Mallow root, powdered*, ſhould be added.

ZIMMERMAN informs us, that he avoided thoſe rocks, on which it ſeems many of his countrymen foundered through ignorance. He ſays, the *Breſlaw* phyſicians laid it down as an indication, in the cure of the dyſentery, that the inflammation ſhould be reſolved; and for that purpoſe recommended tormentil root, valerian, nutmegs, Hungary powder againſt the plague, and the *Confectio de Hyacintho*. He ſays that MARQUET, the Dean of the college of phyſicians at *Nancy*, forbad bleeding, and preſcribed ipecacuanha, rhubarb, diaſcordium, and an aſtringent decoction, in an epidemical dyſentery in *Lorrain*; where, he ſays, ſome people were walking about the ſtreets at five o'clock

o'clock in the afternoon, and were ſeized with it, and dead by ten o'clock at night.

He ſays, that the peaſants killed themſelves with brandy and ſtrong waters; and that a favourite medicine among them for the flux, is red wine and rotten cheeſe; by which vaſt numbers killed themſelves in the county of *Lenzburg*. This barbarous practice, he ſays, has been continued by ignorant phyſicians ever ſince the days of the famous SENNERTUS, by whoſe advice it originated.

ZIMMERMAN does not appear to have conſulted the ancients on this ſubject; cheeſe having been a popular remedy for the dyſentery in all countries, among the common people, in all ages.

I wiſh he had informed us where SENNERTUS recommends *red Wine and rotten Cheeſe* in the dyſentery: for I can find no ſuch remedy, nor any idea leading to ſuch practice, in the writings of that celebrated phyſician.

SENNERTUS ſays, *Lib. IV. Part* 1. *Cap.* 3. *de Alimentorum Facultatibus*—"omnis caſeus alvum ſiſtit;" and adds, what I believe applies very properly, except to laborious people, "meatus obſtruit, et calculo generando

nerando materiam præbet." He ſays, alſo, new cheeſe is cold, and of a flatulent nature; and that the old and rotten ſorts of it are the cauſes of many diſeaſes; "recens et mollis adhuc frigidus eſt et humidus, et flatulentæ naturæ:—antiquos nimis et corruptos cavere oportet. Atram bilem generant, et plurimorum morborum authores ſunt." But cheeſe has been long and juſtly exploded from medicinal uſe, in every country, except among the illiterate and ignorant.

In the treatment of the dyſentery, authors differ but little, in the latter ſtages of the diſeaſe, and their difference there, is but of little conſequence. For unleſs the diſeaſe has been managed with judgment in the beginning, the patient is generally indebted for his recovery to the ſtrength of his conſtitution, or to ſome fortunate change that time, and not medicine, effects in his habit.

This is the reaſon that I have made what is relative to the firſt ſtage of the dyſentery, the principal object of this treatiſe. Here authors differ widely indeed; and however ſucceſsful their practice may have been in particular epidemics, there has been leſs done to ſerve the purpoſes

purpoſes of general practice, than might be expected from the united labours of ſo many learned and excellent phyſicians, at the only period of the diſeaſe, when method and medicine are of any importance. For I moſt firmly believe, that if the diſeaſe be at firſt judiciouſly treated, and the patient properly prepared for the uſe of bark, with a ſuitable regimen,—that horrid ſtate of dragging on a miſerable life, under an haraſſing dyſentery, or diarrhœa, may almoſt always be prevented.

Hence it is that I have taken ſo little notice of ſtages of the dyſentery, which I think ought not to exiſt; and have diſregarded that part of the practice of others, where the only merit conſiſts in contriving ſome greaſy, glutinous, or ſtyptic, and unnatural compoſition,—which never can be uſed, but in violation of all the laws of animal œconomy.

It is certain that patients often err—habits of body vary—ſkilful advice is not always preſent — conveniences are ſometimes abſent—fluxes may remain after febrile ſymptoms have ceaſed—chronical dyſenteries, and diarrhœas, will occur in practice—therefore, though it is not my deſign to enter into a detail, already

ſufficiently underſtood, I will communicate the beſt remedy I know in thoſe diſeaſes, for the reputation of which, I pledge the experience of many years. And I aſſure thoſe who will not be deterred from uſing it, on account of its inelegance and cheapneſs, that they will find it productive of as much ſucceſs, as any rational perſon can expect from one medicine.

The diverſity of organization, temperament, and condition of the human frame is ſuch, that there cannot be in nature, what many good men have wiſhed for (but not for the purpoſe of concealing it for their own private advantage), an univerſal remedy in diſeaſes.

Curative indications muſt depend on ſymptoms;—ſymptoms are not uniform and unchangeable. Ignorance may pretend to, but reaſon denies the poſſibility of SPECIFICS.

SOLUTIO VITRIOLICA.

℞ *Vitrioli albi drachmas tres*;
Aluminis rupei drachmam;
Coccinellæ pulveratæ grana tria;
Aquæ ferventis libram. Miſce in mortario marmoreo. Solutio à fæculentia vel reſidendo expurgetur, vel per chartam bibulam filtretur.

In

In this ſolution, the proportion of either the vitriol or alum may be augmented or diminiſhed, according to circumſtances; that is, when evacuations are required, the quantity of alum may be diminiſhed, or even intirely omitted; and when great aſtringency is required, the quantity of alum is to be increaſed, and the vitriol to be diminiſhed. I frequently direct equal parts of theſe ingredients; that is, three drams of alum in the above quantity. The common Engliſh alum may be uſed. The doſe is from a table ſpoonful, to a tea ſpoonful, according to the ſtrength and age of the patient, which is to be taken every morning faſting; and in ſome caſes to be repeated every ſix hours; without any addition or alteration, by diluting or mixing it, with any liquor whatever.

In ſlight dyſenteries, and when the SUDORIFIC proceſs could not be put in practice, I have uſed this ſolution with the utmoſt ſucceſs: giving it at firſt without the alum, in ſufficient doſes to cauſe evacuations, and afterwards with the alum in nauſeating doſes, frequently, with opiates at night. This I have found far

more efficacious in the dyſentery, than emetic tartar, ipecacuanha, rhubarb, or ſalts, as evacuants, in whatever manner combined, or adminiſtered.

But where a diarrhœa has been of long ſtanding, the cure neceſſarily muſt be performed by ſlow degrees; then a doſe every morning faſting, only, or every night and morning, will be ſufficient. It is in inveterate caſes to be continued for weeks, or months; omitting it now and then for a few days.

In table ſpoonful doſes it generally cauſes a vomiting, or great nauſea, and ſometimes a purging, for the firſt few times of taking it. When the ſtomach is foul, vomiting may be encouraged by drinking chamomile-flower tea, otherwiſe that is unneceſſary. If after taking it ſeveral times, it ſtill create vomiting, or more nauſea than is eaſily ſupportable (for ſome nauſea is intended), the doſe muſt be diminiſhed. If it continue to purge more than is proper, or cauſe any griping, neither of which often happens, a few drops of laudanum muſt be given occaſionally, or every night at bed-time. It is not neceſſary to ob-

ſerve any particular regimen, merely on account of the ſolution: and the patient may eat, or drink, as ſoon after it, as its diſguſting taſte, or the nauſea it produces, will permit.

ON THE

ENDEMIAL CAUSUS,

COMMONLY CALLED THE

YELLOW FEVER

OF THE

WEST-INDIES*.

THE *Endemial Cauſus*, or *Yellow Fever*, which is the terror of Europeans newly arrived in the Weſt-Indies, is called by the French *la Maladie de Siam.*

Monſieur POUPPÉ DESPORTES, who practiſed phyſic at *St. Domingue*, from 1732 until 1748,

* This treatiſe has been ſeparately publiſhed on the Continent, under the title, DE CAUSO TROPICO ENDEMICO, SIVE FEBRE FLAVA, QUÆ IN INDIIS OCCIDENTALIBUS OBSERVATUR. It was my INAUGURAL DISSERTATION at *Leyden*.

and who had more experience, and has written from better information on the diſeaſes of that colony, than any of his countrymen, ſays, this fever was ſo called from its being firſt taken notice of in the iſland of *Martinique*, at a time when ſome veſſels were there from *Siam*.

" Le premier évenement qui l'ait fait remarquer, a été la relâche, à la Martinique, d'une nombreuſe eſcadre qui venoit de *Siam*, & dont l'équipage, pendant ſon ſéjour dans cette Colonie, fut affligé d'une Fievre Maligne, ou Peſtilentielle, qui fit périr un grand nombre de matelots." And notwithſtanding this account of it by M. DESPORTES, he immediately ſays, " Cette maladie attaque très rarement les *Créoles* ou les *Sauvages* habitans de l'Iſle : les Européens deſtinés à vivre ſous un climat plus tempéré, en ſont, pour ainſi dire, les ſeules victimes *."

This account, though probably true enough as to the time of its being firſt obſerved in the French colonies, is extremely incorrect in other reſpects : for M. DESPORTES has not only admitted a ſuppoſition that the diſeaſe origi-

* Vol. I. p. 191 & 192, Hiſt. des Malad. de St. Domingue.

nated

nated among thoſe Eaſt-Indian mariners, but calls it *peſtilential*, and ſays, that Europeans are almoſt the only victims of it.

The generality of the French writers ſay that it was brought directly from *Siam*, in a merchant ſhip, and communicated to the people of *Martinique*, whence the contagion was carried to *St. Domingue*, but that ſailors were the only people attacked by it, whence it was alſo called *la Fievre Matelotte* *.

This account of the origin of the diſeaſe has been univerſally credited by the French writers, who have not been at the trouble to conſider, that a diſeaſe brought from *Siam* in the Eaſt-Indies, in a ſimilar latitude to the Weſt-Indian iſlands, would be moſt likely to affect the natives, living in a climate ſimilar to that in which the diſeaſe originated, rather than Europeans of ſo different a temperament of body. But the fact is, that this diſeaſe never attacks either white or black natives of hot climates; neither was it brought from *Siam*: and though it is poſſible, from the heat of the climate, that

* The ſeamen at the *Cape*, in Hyſpaniola, in the ſummer of 1734 were, nearly half of them, cut off by this fever. It has often ſince that time made its appearance there among the ſailors, and has been very fatal.

it

it may frequently appear there, or in any other tropical country (though BARRERE ſays it is unknown at *Cayenne* *), no hiſtory of that country, that I have yet met with, mentions ſuch a diſeaſe †; notwithſtanding what many writers have boldly advanced to the contrary ‡.

The Spaniards call it the *Vomito Prieto*, or the *Black Vomiting*, from its moſt direful ſymptom. By this diſeaſe their galleons ſometimes

* Nouvelle Relation de la France Equinoxiale, p. 61.

† LOUBERE, in his Hiſtory of *Siam*, Part 2, Chapter 4, ſays, "among the moſt dangerous diſeaſes there, are fluxes and dyſenteries, from which Europeans that arrive at this country, have more trouble to defend themſelves than the natives of the country, by reaſon that they cannot live ſober enough. The *Siameſes* are ſometimes attacked with calentures, in which the tranſport to the brain is eaſily formed, with defluxions on the ſtomach. Moreover, inflammations are rare, and the ordinary continued fever kills none, no more than in other places in the torrid zone. The external, does ſo exceedingly weaken the natural heat, that of an hundred ſick perſons, Mr. *Vincent*, the provincial phyſician, declared, that he ſcarce found one that had the fever, or any other hot diſtemper. There are a great many cancers, abſceſſes, and fiſtulas. The eryſipelas is here ſo frequent, that among twenty men, nineteen are infected with it." &c.

‡ WARREN, a phyſician at *Barbadoes*, in his *Treatiſe concerning the Malignant Fever in Barbadoes*, written in 1739," ſays, "it is called *la Maladie de Siam* from a country of that name in the Eaſt-Indies, where it is a conſtant inhabitant." Page 3.

loſe

loſe the principal part of their men, in the Weſt-Indies, particularly at *Porto Bello* and *Carthagena*.

That this diſeaſe is a ſpecies of the καυσος of HIPPOCRATES *, ARETÆUS †, and GALEN ‡, that is, the *Febris Ardens*, or *Cauſus*, as it is called, I think there can be no doubt;—aggravated by climate—incidental only to the groſs, inflammatory, and plethoric—at any ſeaſon of the year—and totally different from the *Remittent Bilious Fever*, to which all habits of body are ſubject, in hot climates, particularly after rains, and in the fall of the year.

The *Cauſus*, the moſt ardent fever in temperate climates, as deſcribed by the fathers of phyſic, is a diſeaſe ſeldom ſeen in theſe northern parts of Europe; and never attended with that violence of ſymptoms, which accompanies the ſame deſcription of diſeaſe in hot climates. And whether in latitudes ſo mild as thoſe of Spain, Italy, Greece, and the Archipelagan iſlands, the *Cauſus* has ever been

* Lib. de Acutorum Morborum Victu, et Lib. de Affectionibus.

† De Cauſo, Lib. II. Cap. 4. de Cauſ. et Sign. Acut. Morb.

‡ Comment. 4. in Lib. HIPP. de Acut. Morb. Victu.

attended

attended with *black vomiting*, as in the Weſt-Indies, I cannot tell. LOMMIUS mentions the vomiting of blood, and voiding black liquid ſtools, and black urine *.

Critical, and ſymptomatical yellowneſs of the ſkin in the *Cauſus* is enumerated among the ſymptoms by HIPPOCRATES †; and the accurate LOMMIUS particularly mentions the danger of that appearance before the ſeventh day; "grave eſſe periculum ſignificatur ubi aurigo ante ſeptimum diem oritur ‡."

The affinity of the ſymptoms, progreſs, and termination of a *Cauſus*, in Europe, to thoſe of this fever of the Weſt-Indies, excepting the black vomiting, leaves no room to doubt that the difference of climate conſtitutes all the difference that is found between them. Therefore I have adopted the name of *Endemial Cauſus*; the propriety of which, I hope, will be juſtified, in the deſcription of the diſeaſe.

The *black tongue* is always mentioned as a ſymptom in the *Cauſus*; of which appearance HIPPOCRATES has made a judicious diſcrimina-

* Lib. I Med. Obſ.

† L. de Judicat.

‡ Loc. cit. & HIPPOCRAT. Aphor. 62. Sect. 4.

tion,

tion, that all other writers have omitted.—The tongue, he ſays, "primum, flava eſt; ſed procedente tempore nigreſcit. Si igitur per initia nigreſcat, celeriores ſunt liberationes; ſi vero poſtea, tardiores *." Which is exactly the caſe in the yellow fever.

TRALLIAN ſays, in the *genuine* cauſus the tongue is black, but not in the *ſpurious* cauſus; yet he conſiders the latter as the moſt dangerous diſeaſe †: and LOMMIUS ſpeaks of the danger of the tongue being firſt dry, then rough, then black and foul ‡.

HIPPOCRATES mentions in other places, ſome circumſtances not enumerated in his deſcription of the *Cauſus*, that will be taken notice of hereafter, which we find correſpond with the yellow fever; and are convincing proofs that he had ſeen fevers attended with a vomiting of black blood (what the ancients ſometimes termed black bile), as in his prognoſtics he often mentions the fatality of that ſymptom; and ſome that were equally rapid with this diſeaſe.

* Lib. de Diebus Judicatoriis, Cap. 5.
† Lib. XII. Cap. 3.
‡ Loc. cit.

Of

Of the *Cauſus*, he ſays, "*Febris Ardens* fit, quum reſiccatæ venulæ tempore æſtivo, acres et bilioſos ichoras ad ſe attraxerint: ac febris multa detinet, corpuſque quemadmodum ab oſſeariâ laſſitudine affectum, laborat, doletque. Fit plerumque tum ex longo itinere, tum longa ſiti, quum arefactæ venulæ acres calidaſque fluxiones ad ſe attraxerint. Fit vero lingua aſpera, et ſicca, valdeque nigra; partiumque ventris morſu dolet; dejectiones tum liquidæ, tum pallidæ fiunt; ſitis adeſt vehemens, et vigiliæ, atque interdum mentis alienationes *."

He obſerves, alſo, "febris et ſitis vehemens afficit, lingua aſpera et nigra, ſpiritus ſanè calore redditur, color aliquantulum bilioſus fit, et ſputa bilioſa. Atque ægro exteriora frigida ſunt, interiora verò admodum calent †."

He ſays there is another ſpecies of *Cauſus*, in which, "alvus ſubducitur; ſiti ſcatet; lingua aſpera, ſicca, ſalſa; urinæ ſuppreſſio; vigilia; extrema refrigerata ‡."

* De Acut. Morb. Victu, Sect. 4. Art. 1, 2, 3, 4.

† De Affectionibus, Lib. Cap. 3.

‡ De Acut. Morb. Victu, Sect. 4. Art. 13. 14.

Of

Of the two ſpecies of this diſeaſe, mentioned by HIPPOCRATES, GALEN denominates one a *genuine*, and the other a *ſpurious* cauſus: one was ſuppoſed to proceed from bile, the other from phlegm. In the former, the tongue was black; in the latter not. TRALLIAN, and other writers, have adopted this diſtinction. GALEN alſo remarks, that the coldneſs of the extremities is a ſymptom only of the ſpurious cauſus, and then only when the fever is malignant; but that in the genuine, bilious, and burning cauſus, the heat of the body is extended to the extremities.

He ſays, "*Febrem Ardentem* medicos reperio appellare, quum calor hominem exurat, ſitiſque inexplebilis detineat. Quod ſi ita ſe habeat, *Cauſum* eum, in quo corpus non uritur, ſitiſque levis eſt, *Cauſum* quidem ſimpliciter, exquiſitum autem legitimumque non dicemus *."

ARETÆUS, in his deſcription of the *Cauſus*, ſays, "Ignis paſſim et acer et tenuis eſt; ſed intus maxime. Spiritus tanquam ab igne, calidus; aeris vehemens attractio, frigidi cupiditas, lingua arida, in labiis et cute ſqualor;

* In Lib. HIPP. de Acut. Morb. Victu, Com. 4. Art. 13.

algent

algent extrema, lotium quam bilioſiſſimum, inſomnietas, arteriarum motu crebri, parvi, imbeceili ; oculi puri, lucentes, ſubrubri ; facies bene colorata.".

"Quod ſi morbus ulterius creſcat, omnia majora et ſæviora fiunt. Arteriæ minimis motibus et creberrimis agitantur ; ignis aridiſſimus et accerrimus. Mens delirat, omnia ignorat. Siticuloſi fiunt, omnia frigida attractare cupiunt, parietem, veſtem, pavimentum, humorem. Manus frigent, ſed palmæ perquam calidæ. Ungues livent. Spiratio crebra eſt ; roſcidus humor circa frontem et jugula. Quum ad ſummam ariditatem caloremque corporis natura pervenerit, tum calidum in frigidum, ſqualor in imbrem convertitur. Rerum namque ad maximam molem incrementa in contrarium ſtatum prolabuntur. Ubi ergo naturæ nexus ſoluti fuerint ea ſyncopa eſt. Tunc ſudor ingens toto corpore funditur, et nullo pacto compeſcitur. Spiratio frigida eſt, vapor è naribus múltus exhalat. Siti non vexantur ; cætera enim exaruerunt ; quinetiam alia inſtumenta ſitiunt, os et gula ; urina tenuis et aquea redditur. Alvus plurimum adſtricta eſt ; nonnunquam tamen pauca quædam bilioſa deſcendunt. Copioſa et aliena humiditas redundat, oſſa

oſſa quoque tabeſcentia diffluunt, et undique, ut in flumine, ad exteriora omnia dilabuntur.*"

Lommius, in enumerating the ſymptoms, has taken in ſome, omitted by Aretæus, in the preceding relation.—"Summo incendio corpus extorretur, idque intus magis quam foris. Accedit pertinax vigilia, et profundior interdum ſomnus. Lingua arida, et craſſa, et aſpera, ſubnigraque et amara eſt. Spiritus difficillimè trahitur, incipit affici morſu ſtomachus, cibique cupiditas perit, vehemens tum ſitis, tum æſtus præcordiorum eſt. Alvus aliis ſoluta, aliis compreſſa eſt. Ipſe æger penitus inquietus morbum male ſuſtinet, frequentique ſubinde delirio perturbatur. Hoc febris genus, quoniam ſumme vehemens eſt, brevi finitur. Itaque ſi protinus ab initio ſigna exhibet bona, pleriſque omnibus quarto die ſolvitur, nullis poſt ſeptimum manet. Tum vero aut vomitio fit, aut alvus profluit, ſudorve ex omni corpore, aut ſanguis è naribus fertur †."

Notwithſtanding that degree of cauſus which we call the *Yellow Fever*, appears from the nature of the diſeaſe to be indigenous to the tor-

* De Cauſ. et Sign. Acut. Morb. Lib. II. Cap. 4.

† Lib. I. Med. Obſ.

rid zone, there was no notice taken of it in the Weſt-Indies until nearly two centuries had elapſed from their diſcovery.

Ulloa ſays, "the *Vomito Prieto* was unknown at *Carthagena*, and all along the coaſt, till the years 1729 and 1730. In 1729 *Don Domingo Juſtiniani*, Commodore of the *Guarda Coſtas*, loſt ſo conſiderable a part of his ſhips companies at *Santa Martha*, that the ſurvivors were ſtricken with aſtoniſhment and horror at the havock made among their comrades. In 1730, when the galleons under *Don Manuel Lopez Pintado* came to *Carthagena*, the ſeamen were ſeized with the ſame dreadful mortality; and ſo ſudden were the attacks of the diſeaſe, that perſons walking about one day, were the next carried to their graves. Unhappily, after all the experiments of the ſurgeons of the galleons, and phyſicians of the country, no good method of treating the diſeaſe has been diſcovered; no ſpecific for curing it, nor preſervative againſt it *."

Warren, though he lived at *Barbadoes* in 1739, ſuppoſes it never appeared in that iſland, until about the year 1721, and that it was then

* Voyage to South America, Book I. Chap. 5.

brought

brought from *Martinique*, in the *Lynn* man of war. He ſays, the ſecond appearance of it there, was in 1733, and that it then came alſo from *Martinique*.

He undertakes to ſhew, that it is a diſeaſe of *Aſiatic* extract, and ſays, that "a *Provençale* fleet arrived at *Port St. Pierre* in *Martinique* from *Marſeilles* on-board of which were ſeveral bales of Levant goods, which were taken in at *Marſeilles*, from a ſhip juſt arrived from *St. Jean D'Acre* (probably the *Ptolemais* of the ancients). Upon opening theſe bales of goods at *Port St. Pierre*, this diſtemper immediately ſhewed itſelf, many of the people were inſtantly ſeized, ſome died almoſt ſuddenly, others in a few days, and ſome lingered longer; and the contagion ſtill ſpreading, made great havock at the beginning."—He ſays he had this account from Mr. *Nelſon*, an Engliſh ſurgeon, who was ſeized with the diſeaſe in *Martinique*, and died of it a few days after his arrival at *Barbadoes*.

He ſays, it is "probable that the ſame fever, or one of very near reſemblance and affinity, may firſt have been carried among the American Spaniards (among whom it is now endemic), in ſomewhat a like manner; and that

poſſibly ſome peculiar qualities in the air and climate might have foſtered and maintained it there ever ſince."

And yet, he ſays, ſea-faring people and new-comers are moſt obnoxious to it; "ſuch as had purer blood, and probably leſs aduſt than that of the natives; or of thoſe whoſe conſtitutions had been, for many years, fitted and habituated to the climate *."

How a climate ſhould foſter a diſeaſe, and a contagious one, and the natives of that climate be exempt from it, I cannot comprehend: but the whole ſtory is fabulous, therefore it is unneceſſary to reaſon on it.

TOWNE, who practiſed in *Barbadoes*, and who wrote on the diſeaſes of that iſland before him, in 1726, takes not the leaſt notice of this chimerical origin of the *Yellow Fever*, but conſiders it as an endemical diſeaſe in the Weſt-Indies; to which Europeans are ſubject on their firſt arrival: and HILLARY, who wrote long after both of them, in 1759, ſays, it is "indigenous to the Weſt-India iſlands, and that it moſt commonly ſeizes ſtrangers, eſpecially thoſe who come from a

* Pages 5 and 6.

colder

colder or more temperate climate." He ſays, "a better inquiry would have informed WARREN that this fever had appeared in Barbadoes, and the other Weſt-India iſlands, many years before; for ſeveral judicious practitioners who were then, and now are living (about the year 1760), whoſe buſineſs was viſiting the ſick, ſome of them almoſt eighty years of age, who remember to have ſeen this fever frequently in this iſland, not only many years before that time, but many years before that learned gentleman came to it *."

HUGHES, who was not himſelf a medical man, ſays, in his Natural Hiſtory of Barbadoes, in 1750, "doctor GAMBLE remembers that it was very fatal here in the year 1691, and that it was then called the *New Diſtemper*, and afterwards *Kendal's Fever*, the *Peſtilential Fever*, and the *Bilious Fever*. The ſame ſymptoms did not always appear in all patients, nor alike in every year, when it viſited us. It is moſt commonly rife and fatal in May, June, July, and Auguſt, and then moſtly among ſtrangers; though a great many of the inhabitants in the year 1696, died of it; and a great many at different periods ſince †."

* Page 144. † Page 37.

WARREN, positive as to the origin and pestilential nature of this fever, invented a treatment (in which bleeding was seldom or never to be performed, and the patient to take heating alexipharmics, and to be covered up with blankets) consistently erroneous with his pathological principles. Yet among all this perversion of reason, the rays of an excellent understanding frequently break forth, through the clouds of hypothetical chaos.

But WARREN addressed his book to MEAD, whose tenets he had imbibed; and MEAD was the ARCHIMEDES of physic:—give him but his position, and the whole Æsculapian world was turned upon the axis of a syllogism.—Nature was in those days empiricism, and contagion and infection were fashionable doctrines.

THUCYDIDES ventured only the reputation of common report, in tracing the plague of Athens through Africa and Egypt, down from Æthiopia*. But MATTHÆUS VILLANUS, and MEAD

* DIODORUS SICULUS, *Lib.* XII. *Cap.* 7. gives a very rational account of that distemper. He says, "The Athenians during this incursion, durst not come into the field, but kept close within the walls of their city; by reason whereof a great plague

MEAD, ventured much farther; the former found no difficulty in bringing the plague, which

plague raged among them. For a multitude of all ſorts of people being crowded together, it may be reaſonably concluded, that through the ſtraightneſs of the places, the air was corrupted and cauſed the infection." And of the ſecond plague, he ſays, "Abundance of rain had fallen in the winter, by reaſon whereof the earth being over-wet in many places, eſpecially in low and hollow grounds, the water lay like ſtanding pools; and thoſe being putrefied and corrupted by the heat of the ſummer, thence proceeded a miſt of groſs and ſtinking vapours, which corrupted the air, as it often happens about filthy marſhes; and beſides, the want of food much advanced the progreſs of the diſeaſe, for the year before, the fruits, by too much rain, were crude and unwholeſome."

"There was likewiſe a third cauſe of this diſtemper, which was this. The *Eteſian* winds (northern winds), which come at ſtated and certain times of the year, did not blow this ſummer, by whoſe gentle breezes the violent heat was conſtantly allayed, before, at other times; ſo that the heat being now exceſſive, and the air as it were inflamed, mens' bodies now wanting the uſual refreſhment, contracted an evil habit, from whence aroſe, through the vehement and immoderate heat, all ſorts of burning diſtempers; and hence it was that many ſeized with this diſeaſe, to free themſelves from the burning heat that was in their bodies, caſt themſelves into pits and wells. In the beginning of the diſtemper, before the ſun aroſe, through the coldneſs of the air that came from the water, their bodies would ſhake and tremble; but about noon, being ſo cloſe, and ſhut up together, they were ſuffocated with heat. At firſt, catarrhs and ſwellings of the throat came on, cauſed by the ſtench of the bodies that lay

which originated in Venice 1348, from Greece; and the latter in making the *Sudor Anglicanus* a mutilated plague, and tranſporting it from the ſiege of Rhodes by the Turks, notwithſtanding the diſeaſe appeared five times, after long intervals, in this country, where it unqueſtionably was a genuine endemic. However, neither of theſe two gentlemen would, I believe, have ventured to follow the contagion of the yellow fever from Paleſtine to Marſeilles, and from Marſeilles over the Atlantic Ocean, to the Weſtern World.

unburied, and the putrefaction of the ſoil. Then followed fevers, pains in the back, heavineſs of the loins, dyſenteries, blotches, and boils, over the whole body. Thus were they tormented by the plague. Others were ſtricken mad, and ran about the camp like wild beaſts, and beat every perſon they met. All help of phyſicians was in vain, both by reaſon of the violence of the diſtemper, and the ſudden diſpatch it made of many; for in the midſt of great pains and horrible torments, they died, commonly on the fifth, or at moſt on the ſixth day. But the Athenians judged that ſo grievous a diſtemper was from God, and therefore, according to the charge given them by the oracle, they purged the iſland of *Delos*, which was formerly dedicated to *Apollo*, now polluted as they conceived, by burying many dead bodies there. Therefore all the graves of the dead were dug up, and the urns were tranſported into the next iſland, *Rhene*; and a law was made that it ſhould not be lawful for any, for the time to come, either to bury, or to bear a child in *Delos*."

A French

A French author, in a publication in 1776, at Paris, intitled, *Des Moyens de conſerver la Santé, &c. aux Antilles, ou Climats Chauds et Humides, de l'Amérique*, ſpeaking of the yellow fever, ſays, "C'étoit une ſorte de fievre colliquative très-aigue." — "Cette Maladie qui étoit contagieuſe, fut d'abord traitée par d'abondantes ſaignées, mais ſans ſuccès; on fut plus heureux moyennant l'uſage intérieur des acides, et leur application extérieure. Ce que nous avançons ici n'eſt que ſur le rapport des autres; cette maladie n'exiſtoit plus à notre arrivée aux Antilles *."

It is impoſſible to ſay what could give this gentleman an idea that the application and uſe of acids would cure the *Yellow Fever*, or what could induce him to ſuppoſe it was extinct; but the following curious queſtions are not to be omitted. They will ſerve as a full ſample of their author's knowledge, and juſtify the leaving him, for ſomething more relative to our ſubject.

"Quelles ont été ſes cauſes qui probablement n'ont été que paſſageres? Quelles ont été celles

* Page 50.

de

de ſon *extinction?* Les cauſes de cette maladie exiſtoient-elles dans le pays ? Se rencontroient-elles dans les bâtimens ? Ou étoit-ce dans l'atmoſphère qu'on traverloit dans la route * ?"

In the *Endemial Cauſus* of the Weſt-Indies, ſome of thoſe ſymptoms which have given names to the diſeaſe, are now but ſeldom ſeen, unleſs when the patient has applied for advice too late, or where improper advice has been unfortunately purſued : nor did I ever ſee, or hear of an inſtance, which LIND ſuppoſes may happen, that the " *Black Vomit* may attack a man, when newly arrived there, without any previous complaint †;" nor of this diſeaſe coming on with " an uneaſy itching ſenſation commonly in the legs, and upon pulling down the ſtockings, ſtreams of thin diſſolved blood followed, a ghaſtly yellow colour quickly diffuſed itſelf over the whole body," &c. ‡. The former, unqueſtionably, is a ſymptom of the *Endemial Cauſus*, though not at the period of it LIND ſuggeſts ; but the latter is no ſymptom of this diſeaſe, nor, I believe, of any other.

That the black vomiting appears earlier in ſome caſes than in others, is certain ; and the

* Page 30. † Page 129. ‡ Page 143.

earlier

earlier it appears, the greater certainty there is in the prognoſtic of immediate death *.

From the various names given to this diſeaſe, improperly taken from its ultimate, and not from its primary ſymptoms, many difficulties have ariſen to young practitioners, and to ſtrangers in the Weſt-Indies: and this confuſion of terms has often been productive of fatal conſequences in practice.

TOWNE calls it, *Febris Ardens Bilioſa*; WARREN, a *Malignant Fever*; and HILLARY, a *Putrid Bilious Fever*.

WARREN attacks TOWNE, and HILLARY attacks WARREN, reſpecting the propriety of terming it *bilious*. I think I may venture to aſſert that neither of them has decided, whether *bile* is the *cauſe* or the *conſequence* of the diſeaſe †.

TOWNE appears to me to have had a more correct idea of the diſeaſe than HILLARY; and WARREN, I think, except in his deſcription of

* Quibuſcunque morbis incipientibus, ſi bilis atra ſurſum, aut deorſum prodeat, lethale.

HIPPOCRAT. Aphor. 22. Sect. 4.

† Vide p. 126, & 127.

the

the ſymptoms, had ſcarcely any idea of it at all.

It is my opinion that the importance of the name of this fever, has not been ſufficiently conſidered; and HILLARY, though he diſapproves of the appellation which ſome have given to it, evades the ſubject himſelf, as a diſpute only about words.

I own I differ from him widely; for among the miſchiefs which attend miſnaming this fever, or giving it a name that conveys no idea of its firſt appearance, a ſtranger will not know what diſeaſe it is when he ſees it,—until accompanied by its fatal attendants, a yellow ſkin and black vomiting.

If this diſeaſe be called a *Malignant Fever*, the idea which is annexed to a malignant diſorder, will influence the treatment of it; ſuch practice as is neceſſary in an inflammatory diſeaſe, will never be thought of here, and the ſame miſtakes will be committed by others, as were committed by WARREN; who, from thinking it not only malignant, but *peſtilential* and *contagious*, inſtead of bleeding, and purging,

ging, on which in the beginning, the cure ſolely depends, he began by covering the patient up, and ſtifling him with bed-clothes, and alexipharmics, which muſt, as HUGHES obſerves, "have very often failed *."

If it be denominated a *Putrid Bilious Fever*, what perſon in treating a putrid fever, would think of large and repeated bleeding in the beginning?—If it were a putrid bilious fever, ſuch practice would certainly be improper; therefore, ſurely this term alſo muſt have an injurious tendency.

I have uſed the word *yellow* in compliance with cuſtom; but I even diſtruſt that name: as the inexperienced may be looking out for that appearance, and not find, until it is too late, the diſeaſe he has to contend with. Indeed the yellowneſs of the ſkin, like the black vomiting, is not an invariable ſymptom of this fever;—thoſe who are fortunate enough to recover, ſeldom have it; and many die without its appearance. Beſides, the yellowneſs alone, leads to nothing certain; it may ariſe from an inoffenſive ſuffuſion of bile, as well as from a gangrenous ſtate of the blood.

* Hiſt. of Barbadoes, page 39.

The

The term to expreſs a diſeaſe by, ſhould agree with ſome circumſtances that characterize its attack, or firſt appearance. The circumſtances which characterize this, agree with no fever, but the *Cauſus*. Beſides, this diſeaſe is no more putrid, than the ſmall-pox, or any other acute diſeaſe; which may, after it has paſſed its inflammatory period, change to putrefaction, and end in death, with an extraordinary degree of diſſolution of the fluids.

The truth is, that this diſeaſe is in the higheſt degree poſſible, an inflammatory one; accompanied with ſuch ſymptoms, in a greater extent, as attend all inflammatory fevers, and moſt ſtrikingly the reverſe of any diſeaſe that is putrid, or of one continued exacerbation *. It obeys no particular ſeaſon of the year; and attacks alſo ſuch people, and under ſuch circumſtances, as are ſeldom the objects of putrid diſeaſes.

In the hiſtory of this fever, a multitude beſides thoſe whom I have named, have tried

* "Differt autem febris ardens à continente putrida, eo quod hæc ex ſanguine putrefacto conflatur, et à principio uſque in finem unam habet exacerbationem." AETIUS, *Tetr.* 2, *Serm.* 1, *Cap.* 77.

their

their ſtrength, in vain; having done nothing more than copy thoſe originals: with the addition, perhaps, of ſome trifling medicine, or unimportant obſervation. But the ſymptoms have always been better deſcribed, than the diſeaſe has been treated.

An attentive obſerver may deſcribe a diſeaſe, though he may not know how to treat it properly; for though there can be but one way that is juſt, in deſcribing a diſeaſe, conformably to the ſteadineſs which nature always obſerves,—yet there may be ſeveral ways of curing it; which nature herſelf adopts, and in which ſhe is not conſtant.

People from colder climates, North-Americans and Europeans, on their arrival in the Weſt-Indies, as I have obſerved already in another place *, are ſubject to what is called a *Seaſoning*. This ſeaſoning is underſtood to be the firſt illneſs they are attacked with; which, unleſs they live very temperately, or are in a proper habit of body, though ſome people are unmoleſted for many months, ſeldom ſuffers them to remain long before it makes its ap-

* Page 113.

pearance,

pearance, in ſome mode or other; particularly if, at firſt, they expoſe themſelves in a ſhower of rain, or too long in the ſun, or in the night-air; or when the body is much heated, if they drink large draughts of cold liquors, or bathe in cold water; or uſe much exerciſe; or commit exceſs in drinking wine or ſpirits; or by heating the body and inflaming the blood; or by ſubjecting themſelves to any cauſe, that may ſuddenly check perſpiration,—which at firſt is generally exceſſive.

"Scio equidem nonnullos ob liberalem vini aqua marina diluti potionem, *Cauſo* fuiſſe correptos; veluti et alios ob ſalſamentorum, ſalſarumque carnium atque aliorum quorundam ſalſorum eſum immoderatum; alius ex ambulatione et æſtu veniens, primum quidem lavit ſe, deinde domum perductus, vini mixti plus bibit, cœpitque protinus affici *Cauſo*; alius autem ob vehementem excandeſcentiam, et alius ob vigilias *Cauſum* incurrerunt *."

Some people, from a favourable ſtate of body, have no ſeaſoning. Thin people, and very young people, are moſt likely to eſcape

* GALEN, Com. 4. in lib. HIPP. de Acut. Morb. Victu, Art. 3.

it.

it. Women generally do from their temperance, and perhaps their menſtruation contributes to their ſecurity; indeed hot climates are favourable to the delicacy of their habits, and ſuitable to their modes of life. Some eſcape by great regularity of living; ſome, by the breaking out of the raſh, called the *Prickly Heat*; ſome by a great degree of perſpiration; and ſome by obſerving a cooling regimen.

The diſorders are various that conſtitute this ſeaſoning of *new-comers*, as they are called; depending on age, conſtitution, and habit of body.

But all ſeaſoning diſeaſes are of the inflammatory kind; and yield to antiphlogiſtic treatment proportioned to their violence.—In this general poſition, I do not include the derangements which may happen to habits, naturally, or from diſeaſe, at variance with hot climates.

Subjects moſt likely to be attacked by the *Endemial Cauſus*, are the florid, the groſs, the plethoric;—that ſort of ſtrong, full, youthful people with tenſe fibres, who in England (to uſe a vulgariſm) are ſaid to reſemble the picture of health. In ſhort, ſo are all perſons who are of an inflammatory diatheſis, and do not perſpire freely.

That this fever ſhould be called by the French *la Fievre Matelotte*, I think is very natural; and that ſailors, who eat, drink, and ſleep ſo much at ſea, and uſe no exerciſe, being always of a groſs habit of body, ſhould be attacked with it more than other new-comers to the Weſt-Indies. The heat and dampneſs of harbours, generally in the neighbourhood of marſhes, and expoſed to land winds at nights; the labour on-board of veſſels in port, lying ſtill at anchor, in the ſcorching rays of the ſun, and the careleſsneſs and exceſſes committed by people of this claſs, when they are on ſhore, after long voyages, muſt always ſubject them to the worſt evils, climate can produce.

When a new-comer is ſeized with a ſudden loſs of ſtrength, and a deſire of changing, for reſt, into every poſition, without finding it in any, thoſe ſymptoms which conſtitute the *Endemial Cauſus* may be expected. This is of great conſequence to be underſtood, and to be well remembered.

When a new-comer is taken ill in hot climates, an intermiſſion is not to be waited for; diſeaſe muſt be ſtifled in its birth.

Suppoſing

Suppoſing a perſon, anſwering any of the preceding deſcriptions, juſt arrived in the Weſt-Indies, were to expoſe himſelf to the cauſes already mentioned, the probable conſequences would be, that to-morrow he would perceive an heavineſs, a laſſitude, an oppreſſion, and a loſs of appetite. This is the time to extinguiſh the diſeaſe; but Europeans and North Americans neglect it, as they are not accuſtomed at home to have recourſe to medicine, on the firſt moment of indiſpoſitions.

The following day, but ſometimes within twelve hours from the firſt indiſpoſition, the violence of the diſeaſe will commence thus:—

There will be a faintneſs, and generally a giddineſs of the head, with a ſmall degree of chillineſs and horror, but never a rigor *. Then immediately will ſucceed, an high degree of fever, with great heat, and ſtrong beating in all the arteries of the body, particularly obſervable in the carotid and temporal arteries; fluſhings in the face, gaſping for cool air, white tongue, but tinged with yellow, after the

* "Cum rigore non irruit.—Neque rigor exacerbationes præcedit." AETIUS, Tetr. 2, Serm. 1, Cap. 77.

retchings have commenced; exceſſive thirſt, redneſs, heavineſs, and burning in the eyes; heavineſs and darting pains in the head, and ſmall of the back, and often down the thighs; pulſe quick, generally full and ſtrong; in ſome caſes quick, low, and vacillating; ſkin hot and dry, ſometimes with a partial and momentary moiſture; ſickneſs of the ſtomach, from the firſt, which increaſes with the diſeaſe, and immediately after any thing is taken to quench the thirſt, retchings ſucceed, in which bilious matter is brought up; anxiety with ſtricture, ſoreneſs, and intenſe heat about the præcordia; great reſtleſsneſs; heavy reſpiration; ſighing; urine deep coloured, and but little in quantity. This is the firſt ſtage of the fever, and may continue 24, 36, 48, or 60 hours, and this conſtitutes its inflammatory period.

The ſecond ſtage begins with an abatement of many of the preceding ſymptoms, and the riſe of others; ſometimes with a deceiving tranquillity, but with perturbation, if the patient ſhould fall into a ſleep; then a yellow tinge is obſerved in the eyes, neck and breaſt; the heat ſubſides, and ſometimes with a chillineſs. But not with that ſort of ſtrong rigor*, which,

* "Ardente febre laboranti, ſuperveniente rigore, ſolutio contingit." HIPPOCRAT. Aphor. 58, Sect. 4.

"Febrem autem ardentem, quam Græci καυσωδη vocant, ſubitus horror exolvit." CELSUS, Lib. II. Cap. 8.

when

when it happens, terminates the diſeaſe by ſweat, or by copious bilious evacuations, upwards or downwards. The retchings increaſe and turn poraceous; the pulſe flags, but is ſometimes high, and ſometimes ſoft; the ſkin moiſt and clammy; urine in ſmall quantity, and of a dark croceous colour; the tongue, in ſome caſes, is dry, harſh, and diſcoloured; in others it is furred and moiſt; confuſion in the head, and ſometimes delirium; with the eyes glaſſy. This ſtage of the diſeaſe ſometimes continues only for a few hours, ſometimes for 12, 24, 36, or 48 hours, but ſeldom longer.

It is in the beginning of this ſecond ſtage when attempts have failed, or have been neglected in the inflammatory ſtage, that the great ſtruggle is to be made, between life and death.

In the third and laſt ſtage of the fever, the pulſe ſinks and becomes unequal and intermittent, ſometimes very quick; frequent vomiting; with great ſtraining and noiſe in vomiting, and what is brought up now, is more in quantity, and has the appearance of the grounds of coffee, or is of a ſlate colour; nothing can be retained in the ſtomach; difficult breathing; tongue black; cold clammy ſweats; eyes yellow, and ſunk; yellowneſs round the mouth

and temples, and ſoon after over the whole body.

This univerſal yellowneſs growing deeper coloured, accompanied by an aggravation of all the other ſymptoms, is the immediate forerunner of death. Deep reſpiration; ſubſultus tendinum; a convulſive kind of ſighing; black urine; ſometimes total ſuppreſſion of urine; death-like coldneſs of the hands, feet and legs; heat ſtill about the pit of the ſtomach; delirium, and ſtruggling to get up in the bed; faultering ſpeech; trembling; blood oozing from the mouth, and noſtrils; ſometimes from the corners of the eyes, and from the ears; vomiting black bloody cruor; ſtools the ſame; livid ſpots about the body, particularly the præcordia; hiccup; muttering; coma;—death.

I have divided the diſeaſe into three ſtages, becauſe, between the *inflammatory* and the *gangrenous ſtate*, there is a diſtinct period of its *Metaptoſis*; a compoſure preceding mortification, as is obſerved on all other occaſions, which ſometimes gives ſufficient length of time to perform the cure; though ſometimes it is of ſo ſhort a duration, that the patient ruſhes immediately, as ſoon as the inflammatory ſtate is

is paſſed, into the black vomiting. Sometimes, in this period of the diſeaſe, the ſymptoms are ſo mild, and the patient ſo tranquil, that the diſeaſe is ſuppoſed at an end; and all means are neglected, or thought unneceſſary, until the ſtorm appears which ſucceeds this fatal calm, arrayed in thoſe dreadful forms I have enumerated, as characteriſtic of its third ſtage, and completes the cataſtrophe.

The preceding deſcription correſponds with the general order and manner of the diſeaſe, when the patient dies from the third or fourth, to the ſeventh day. But many patients do not experience all the ſymptoms that I have mentioned, which vary according to habit of body; ſome inclining to characterize the *genuine*, and ſome the *ſpurious* cauſus, of the ancients. Some have no chilline's at firſt, nor faintneſs, nor fluſhings in the face, and the pulſe is ſometimes deeply depreſſed, and not quick; and there are groſs habits of body which have been attacked in very ſultry weather, in damp ſituations, where the inflammatory period has been only of a few hours duration, the *Metaptoſis* has been ſo rapid, that the black vomiting, and the mortified ſtate, have unexpectedly appeared, and have ended the patient in 24, 36, or 48 hours. On the contrary, there are ſome

inſtances where the diſeaſe has been protracted to the eighth, ninth, or tenth day; and others where it has never paſſed from the inflammatory ſtage; but being checked, though not extinguiſhed, it has been lengthened out, and at laſt converted into a remittent of great duration, of moſt difficult cure, and tedious recovery.

During all the periods of the diſeaſe, great heat is perceived near the præcordia, and ſoreneſs and uneaſineſs complained of, in preſſing the hand upon thoſe regions. After death, livid ſpots appear over the whole body, particularly about the præcordia, which, as WARREN juſtly remarks, "ſeem from the beginning to be the chief ſeat and throne of the furious conqueror."

The cauſe of this uniform and particular ſuffering about the præcordia, I think is not what HILLARY has aſſigned; that the parts are near to the "ſeat of the liver and gall-bladder;" and by no means proved, though "the gall-bladder and its ducts are always found turgid with poraceous, blackiſh, and putreſcent bile;" but principally from the contents, or the condition of the ſtomach; at firſt from its hot, corroſive, acrid contents; at length from inflam-

inflammation, from the convulsive motion of incessant straining and vomiting. In short, this viscus seems to bear the chief burden of the disease, while life remains, and the principal internal vestiges of its effects after death.

GALEN explains the cause of that sensation, which is perceived about the præcordia in the *Causus*, to be from a flux of acrid humours thrown on the adjacent parts *.

At the end of the disease, the stomach, in some part or other, is generally mortified, where the black vomiting has been protracted; and when livid spots have appeared on the body previous to death: for on inspecting many dead bodies I have always found some part or other of the stomach, and frequently the superior part of the duodenum in a gangrenous state, and never without evident marks of injury from inflammation, let the disease have been of ever so short a duration. It has been said, that gangrenous spots have been observed in the inferior parts of the curvatures of a very considerable portion of the intestinal canal, but this I have never seen.

* Comment. 4. Art. 4. in Lib. HIPP. de Acut. Morb. Victu.

These

Theſe appearances are univerſally produced by a mortal yellow fever; but from the appearance of the liver, and gall-bladder, though both muſt be materially affected in this diſeaſe, there is no inference to be drawn that can be depended on. Though the cauſe of the diſeaſe aſſigned by GALEN, certainly favours a different concluſion *. Indeed GALEN himſelf, ſpeaking of particular ſymptoms, ſuppoſes the *Cauſus* ſometimes may have its ſeat in the ſtomach, or liver, nay even in the lungs †.

In the courſe of the diſeaſe, though there are ſome ſymptoms common to inflammations of the liver, yet there are more, to inflammations of the ſtomach; and none of the invariable ſymptoms which diſtinguiſh inflammations of the liver from all other diſeaſes.

There is no heavy fixed pain in the right hypocondrium, with inflation and tenſion, and hiccup, as when the concave part of the liver is inflamed; there is no evident and painful

* "Oritur ex bile non nimis ſicca, circa venas quæ ad jecur ſunt." Introductio ſeu Medicus, Cap. 13.

† Propterea hæc, in *ventre* ac *hepate* cauſi veluti ſedem habentibus, accidunt. Verum in *pulmone* cauſi ſedem habentibus, hæc non admodum contingunt, &c.

Com. 4. Art. 4. In Lib. Hipp. de Acut. Morb. Victu.

enlarge-

enlargement of the ſide, with acute pain in breathing, extending up to the neck, or top of the right ſhoulder, and dry cough, as when the convex part of the liver is inflamed.

This fever never terminates in ſuppuration of the liver, as in the *Hepatitis*; though it muſt be confeſſed it often does, in an enormous excretion of bile.

Diſſections have never diſcovered any certain and uniform appearance in the liver, of thoſe who have died of this diſeaſe.—In hot climates a ſound ſtate of the liver is never to be expected, after death, whether the diſeaſe has been acute or chronical.—Of the latter claſs of diſeaſes, it is almoſt always, either the ſeat or the origin.

It is unneceſſary to fill many pages with a long catalogue of preſcriptions and medicines, in the treatment of this fever, for it is compriſed in a few words, and almoſt as few medicines; and requires only care and attention that thoſe moments do not ſlip away, that the occaſion is for ever loſt, when

Bleeding,
Purging,
Baths,
Diaphoretics,
Bliſters, and
Bark,

ought

ought to have been timely uſed, for the ſalvation of the patient's life; and that afterwards they are not untimely employed for its deſtruction.

If a perſon newly arrived in the Weſt-Indies, has ſubjected himſelf to any of the cauſes which may produce this fever, previous to its attack, he has ſufficient warning given him, if he will attend to it, and time enough in general to cure it by anticipation. For as ſoon as any heavineſs, or laſſitude, or reſtleſſneſs, or ſtretching and yawning is perceived, he has reaſon to expect that they are the harbingers of this tragedy; and he ſhould immediately be blooded, and take a doſe of ſalts, and dilute plentifully, and keep himſelf quiet and cool: and after the operation of the ſalts, he ſhould take ſmall doſes of *James's Powder*, live low, and drink barley-water. After the body is well evacuated, and cooled, it is always prudent to take bark.

In the firſt ſtage of the fever, when it has made a regular attack, when theſe precautions have not been uſed, or when they have failed, and the patient is no longer able to abſtain from his bed, he ſhould be kept in a large room,

room, as cool as poſſible, covered lightly with bed-clothes, with a circulation of air admitted into the room, but not directly upon, or near the bed; and this muſt be obſerved through the whole of the diſeaſe.—"Amplo conclavi tenendus, quo multum et purum aërem trahere poſſit; neque multis veſtimentis ſtrangulandus, ſed admodum levibus tantum velandus eſt *."—"Et per flabellum aër ignavior concitetur †."

Bleeding muſt then be performed, and muſt be repeated every ſix or eight hours, or whenever the exacerbations come on, while the heat, fulneſs of pulſe, and pains continue: and if theſe ſymptoms be violent and obſtinate, and do not abate during the firſt 36 or 48 hours of the fever, bleeding ſhould be executed, *uſque ad animi deliquium.*

The blood taken away in the beginning, is very florid, and of the arterial blood colour; and the ſurface never ſizy, and ſeldom contracted.

The intention of bleeding can be anſwered only by performing it immediately, and in the

* Celsus, Curatio Ardentis Febris, Lib. III. Cap. 7.
† Aetius, Tetr. 2, Serm. 1, Cap. 78.

moſt

moſt extenſive manner; which the high ſtate of inflammation, and the rapid progreſs of the diſeaſe, demand. Taking away only ſix or eight ounces of blood, becauſe the patient may be faint, which is a ſymptom of the diſeaſe, is doing nothing towards the cure.—It is like ERASISTRATUS, giving *three drops of Wine* to a patient, juſtly ridiculed by CELSUS *. Where bleeding is improper, no blood ſhould be taken away;—where it is proper, that quantity cannot relieve;—and it is loſing time which can never be regained.

Some practitioners who have not been witneſſes of the good effects of bleeding, from never having taken away a ſufficient quantity of blood, imagine that bleeding is not among the remedies for this diſeaſe. But this diſeaſe truly is not among thoſe that yield to the loſs of a few ounces of blood: for as BOTALLUS obſerves of the pleuriſy, peripneumony, and *Cauſus*, "Num huic ſatis fuerit miſſio ſanguinis unciarum decem aut duodecim? non certe, ſed librarum vel duarum vel etiam trium †."

* Lib. IV. Cap. 11.

† De Curatione per Sanguinis Miſſionem.

Bleeding,

Bleeding, it is evident, muſt not be performed in any other ſtage of the diſeaſe, than the firſt, or inflamatory ſtage; but this has been injudiciouſly done, which has given riſe to the notion, that a patient will ſeldom bear more than two bleedings.

Many practitioners have been deterred from bleeding their patients, from the depreſſion of the pulſe, and from the faintneſs which ſometimes accompany the very firſt onſet of this fever; but here the pulſe always riſes, and the faintneſs diſappears, as the heart is relieved from its oppreſſion, by the loſs of blood.

Faintneſs, and depreſſion of the pulſe here, are not to be conſidered like thoſe circumſtances, where putrefaction has commenced, or where there has been long and fatiguing illneſs; they are ſymptoms here of *plethora*, the reverſe of inanition; and bleeding is adviſed for ſuch ſyncopes by two of the greateſt phyſicians the world has produced *.

Hippocrates directs, "In acutis morbis venam ſecabis, ſi morbus vehemens appareat,

* Aretæus, de Cur. Acut. Morb. Lib. II. Cap. 3. and Alexander of Tralles, Lib. XII. Cap. 3.

et

et qui ægrotant ætatis vigore fuerint, et virium robor ipſis adfuerit *."

Nor is fainting, during the operation, any reaſon for not repeating it, in the firſt ſtage of the fever; for I have often cured it by bleeding only. GALEN aſſerts the ſame †: and it has frequently happened in the Weſt-Indies, that accidental bleeding from the orifice, when a patient has fallen aſleep, to far greater quantities than have ever been directed to be taken away, has carried off the fever intirely: and the ſurpriſe on diſcovering a profuſion of blood in the bed, has been changed to joy, for the alteration produced in the patient.

The efforts of nature would be oftener ſucceſsful than they are, were not her powers totally overcome, in hot climates. Bleeding at the noſe, in the firſt ſtage of this fever, has ſometimes removed it; and it is as certain a ſolution of this fever, as it is of the *Cauſus* in Europe ‡.

In the early part of the diſeaſe, ſpontaneous hæmorrhage is always critical, and ſhould

* De Acut. Morb. Victu, Sect. 4. Art. 17.

† "Curatur, in principio, ſanguinis miſſione." Introduct. ſeu Medic. Cap. 13.

‡ "Si ſanguis è naribus fluxerit, ſolvitur affectio." HIPPOCRAT. de Acut. Morb. Victu. Sect. 4. Art. 10.

never

never be ſuppreſſed ; afterwards it is ſympto-matical, and if not ſtopped, the patient ſoon ſinks under it.

Eruptions about the lips and noſe, painful boils, or phlegmons on the body, which always ſuppurate unkindly, or an abſceſs form-ing, are alſo critical, and generally terminate the diſeaſe *.

Sweating, in the firſt ſtage of the diſeaſe, is ſeldom critical ; for, as SYDENHAM ſays, on a ſimilar occaſion, " non a prævia concoctione, ſed a confuſo particularum noxiarum motu, is eliceretur †.

Whenever ſweats are critical, which may happen very early in the diſeaſe, if the patient has been well evacuated, they are accompanied with a ceſſation of vomiting, and a change of the appearance of the urine ; the ſweating then is to be aſſiduouſly promoted, and if preceded by a bleeding of the noſe, it is a complete criſis ‡.

* " ——— ac ſi abſceſſus aliquis obortus fuerit.

HIPPOCRAT. de Acut. Morb. Victu, Sect. 4. Art. 11.

† P. 254.

‡ Si ſudores ſupervenerint judicatorii legitimi, cum urinis albis craſſiſque, et lævibus ſedimentis."

HIPPOCRAT. de Acut. Morb. Victu, Sect. 4. Art. 10.

The ſickneſs of the ſtomach, and diſagreeable taſte in the mouth, indicate the quality, and not the quantity of the offending ſecretions. The vomiting is from irritation in the ſtomach, and not from plenitude. Therefore vomits are never to be given, though ſtrongly adviſed by TOWNE :—no, not ſo much as warm water, recommended by HILLARY, for fear of exciting and ſtirring up that terrible operation, which, when once begun, no art can, ſometimes, allay. Neither will the firſt part of that counſel authoriſe diſturbing the ſtomach in this fever, which adviſes,

" Si os amarum fuerit, vomere confert, et alvum ſubluere * ;"--

For it will be found that the nauſea and vomiting will not only remain,

" Verum ſi ad hæc non ſolvatur . . . . purgato †,"

but the ſtomach will be ſo aggravated, that no purgative can be retained : it will be thrown up the inſtant it is taken, and the only means

* HIPPOCRAT. de Acut. Morb. Victu, Sect. 4. Art. 6.
† HIPPOCRAT. de Acut. Morb. Victu, Sect. 4. Art. 7.

that

that can remove theſe ſymptoms, will be defeated.

The aphoriſm, "incipientibus morbis, ſi quid movendum ſit, move," is no more a reaſon for giving a vomit than a purge; and the operation muſt correſpond with the nature of the diſeaſe.

How often have I ſeen, and lamented, the effects of emetic tartar, given to remove the ſuppoſed cauſe of the treacherous ſymptom of vomiting!—Even in ſlight degrees of fever in the Weſt-Indies, in young plethoric ſubjects newly arrived, the ſtomach has been ſometimes deſtroyed by it. Inſtead of removing the irritating ſickneſs in this fever, or exciting a diaphoreſis, a ſpaſm has been produced in the ſtomach; inceſſant vomiting; inflammation; the veſſels of the thorax and head have been ſtifled with blood; and the patient has vomited away his life.

Nature's index here is miſconceived. It is for aſſiſtance that ſhe makes theſe ſtruggles, ſhewing that the part is ſuffering deſtruction. It is not an indication that her oppreſſions are leaving her in that manner: for who ever ſaw,

or ever heard of a criſis from inceſſant vomiting?

When a ſufficient quantity of blood has been taken away, which is never done, let the patient's habit be what it may, while the heat, reiterated exacerbations, fluſhings in the face, thirſt, pains in the head, and burning in the eyes, remain,—the next ſtep is to evacuate the contents of the bowels, and turn the humours downwards.

The ancients were afraid of purging in acute diſeaſes; from which general principle, and the old maxim, that "*concocted but not crude humours are to be evacuated*," many fatal miſtakes have happened in phyſic.

HIPPOCRATES adviſes the patient to be purged (with boiled aſs's milk) in a cauſus where the bitterneſs in the mouth continues; and TRALLIAN recommends the cure to be begun with purging where the fever ariſes from bile,—with theſe reſtrictions; that the matter is ready for expulſion, and the attack of the fever not violent. He ſays, he has known purging ſucceſsful in acute fevers; but that care and circumſpection are neceſſary in this practice:—and that plentiful bleeding only, is a more

ſafe and efficacious remedy, with a cooling and diluting regimen.

This fever is generally preceded and accompanied by coſtiveneſs; from which, and the inceſſant vomiting, ending in blood, it ſeems as if the cœliac artery acted the part by the conſtitution, here, on the ſtomach, that the meſenteric arteries do on the inteſtines, in a dyſentery.

But if large and repeated bleedings during the firſt two days, ſhould not remove the thirſt, pains, fluſhings, and heat in the eyes, and the ſtate of the ſtomach ſhould be ſuch as to reject every thing that is taken, ſo that there is no chance of procuring evacuation by ſtool, the patient ſhould have repeated purgative glyſters, and be put into a tepid bath.

"Lavandi ſunt qui fervida et perardenti febri laborant, in domo potiſſimum, ubi ſolium habeatur tepente aqua plenum, ut totum ægri corpus undiquaque ab aqua operiatur *."

The bath ſhould be compoſed of a weak decoction of chamomile flowers, in which a

* TRALLIANUS, de Cauſo.

little nitre may be diſſolved, and ſome vinegar added.

This will often remove every ſymptom at once ; and diſpoſe the patient to a diaphoreſis, which muſt be promoted until a ſufficient quantity of ſome purgative medicine can be taken, ſo as to make an effectual operation downwards.

There is ſeldom a neceſſity to repeat the bath, as the ſtrictures and tenſion generally yield on the firſt immerſion. The patient ſhould not remain long in the bath, nor ſhould it be deferred until late in the diſeaſe, for it can be of no uſe when the ſtomach is deſtroyed.

To aſſuage the vehemence of the thirſt attending a cauſus, it was the cuſtom of the ancients to give the juice of cooling vegetables, and fruits, and large draughts of cold water, and acidulated drinks; and to apply cold, herbaceous, and acid cataplaſms to the ſtomach ; and after GALEN, even to put the patient into a cold bath.

" Qui citra tumorem aliquem inflammatum, aut eryſipelatum ægrotant, ubi concoctionis ſigna

ſigna apparuerint in urinis. Quod ſiquis juvenis ſit carnoſus, tempore æſtatis, et conſtitutione calida ac ſicca, febre in vigore exiſtente, et concoctione in urinis apparente citra viſceris alicujus inflammationem, et in lavacrum frigidæ natatorium ſeipſum injiciat, atque natet, ſudores utique commoverit; ſi vero etiam ad frigidæ balneum aſſuetus fuerit, valde confidente hoc auxilio utatur. Quibuſdam enim ſtatim venter bilioſa egeſſit *.

The bold and deciſive practice of PAUL ÆGINETA in the cauſus, conveys an adequate idea that the ancients thought this was a diſeaſe to be *extinguiſhed* at once: but if the means he purſued were equal to that intent, in the European, it is not in the Tropical cauſus, without bleeding.

"Ex duobus alterum fieri neceſſe eſt, ſi ardens febris perfectè ſolvi debet, aut ut bilioſi humores *excernantur*, aut *extinguantur*. Excernuntur igitur per ſudores, aut vomitum, aut infernam alvum. Extinguuntur per frigidæ potum, per quem nos omnes ardentes febres curavimus †."

* AETIUS, a GALENO, Tetr. 2, Serm. I. Cap. 78.

† De Re Medica, Lib. II. Cap. 30.

GALEN, from whom P. ÆGINETA has taken this doctrine, cured all his patients, after the firſt ſtage of the diſeaſe, with cold water; and goes ſo far as to ſay, he never loſt one, where cold water was given in a proper manner *.

But in giving cold water in the cauſus, none of the ancients, except CELSUS, has obſerved ſufficient practical preciſion. TRALLIAN ſays, he gave it only in the true cauſus, but not in the ſpurious cauſus. AETIUS ſays, cold applications, and cold things, ſhould not be uſed but in the height of the exacerbations, leſt they ſhould act as repellents, and ſhut up the inward heat; and that when any doubt remains concerning uſing cold water, at firſt, the chill ſhould be taken off.

CELSUS, with his uſual accuracy, ſays, cold water ſhould not be given before the fourth day, when the fever is at its height; then it ſhould be drank in great quantities, to cool the ſtomach and præcordia, and to procure a vomiting, where it is neceſſary; after which, the patient is to be well covered, that he may ſleep,

* Com. 4. in lib. HIPP. de Acut. Morb. Victu, Sect. 4. Art. 12.

by

by which means a profuſe ſweat will be raiſed, which, he ſays, is an immediate relief. But it is not to be given unleſs there be great thirſt, and heat, and never when there are any pains or ſwelling about the præcordia, or any complaint in the lungs, or fauces, or an ulcer, or faintneſs, or diarrhœa, or cough *.

Giving very large draughts of cold water in the cauſus, to procure vomiting or ſweating, after the manner of the ancients, is ſtill practiſed in Italy, as I have often ſeen, where this fever is a common attendant on the heat of ſummer. But they wait before they give it, until nature has in ſome meaſure conquered the diſeaſe. ERASTUS ſays, this was the practice in his time.

If cold water be uſed in our endemial cauſus, all the reſtrictions of CELSUS and AETIUS are neceſſary to be obſerved. But the misfortune here is, that cold water is improper in the beginning of the diſeaſe, and our cauſus is too rapid in its termination, to admit of any delay, or interval that is not filled up with medicine. Cold water cannot be given at the ſame time the patient is under the operation of cathartics; and from the firſt moment of the

* Lib. III. Cap. 7.

diſeaſe

diſeaſe to the laſt, cathartics muſt be frequently adminiſtered. Our cauſus does not give us time to ſolace patients with grateful things; and to uſe cold water as an evacuant, would be riſking the loſs of time for an inſufficient, or a doubtful remedy; as we muſt not look forward to a fourteen days termination.

The ſame objections operate againſt acids and fruits; and though lemonade, oranges, water-melons, and granadillos, are extremely cooling and grateful, they interfere with operation of purgatives, diſorder the ſtomach, when uſed at the ſame time, and cauſe them to be rejected.

Vitriolic acid ſhould never be given; all acids are aſtringent, but this is particularly ſo: they contract the fibres of the ſtomach, and prevent purgatives from paſſing onwards through the inteſtines. Beſides, they deſtroy the effect of neutral ſaline purgative medicines. Lemon-juice and ſalt of wormwood, given in an effervescent ſtate, is a proper auxiliary and febrifuge. But the acid and alkaline ſhould be duly proportioned to the exact point of neutrality, and ſufficiently diluted with water.

Soft,

Soft, ſmooth drinks, free from any ſtimulating tendency, ſuch as barley-water, always anſwer beſt for common drink, and are no impediment in the way of medicine.

Glyſters are to be frequently given in the beginning of the diſeaſe, particularly where the patient is coſtive, and to precede the uſe of cathartics, and aſſiſt their operation.

The purging medicine to be uſed in the yellow fever is the *Tartarum Vitriolatum Chryſtalliſatum* or *Sal Polychreſtus*, diſſolved in equal parts of *ſimple Cinnamon* and *common Water*; or in *ſimple Cinnamon water* alone. It muſt be given in ſmall doſes, every hour, until it operates; and the patient is to dilute copiouſly while it operates, with very weak chicken-broth. The quantity of the ſalt is four drams, to ſix or eight ounces of water (as much as the water will diſſolve); and the doſe of it may be two table-ſpoonfuls. In defect of this medicine, ſoluble tartar, or ſal catharticus amarus, or manna and cream of tartar, muſt be uſed. But let me caution practitioners againſt adding emetic tartar, in order to quicken the operation of theſe medicines; which, how-

however uſeful it may often be in bilious diſeaſes, may be fatal in this.

Purging generally completes the ſuppreſſion of the fever, and carries off the vomiting; but it muſt be continued while the ſtools remain bilious, or fœtid; otherwiſe the fever will riſe, and the vomiting return.

In caſe the fever ſtill continues, the ſtomach ſettled, and the bowels well evacuated, recourſe muſt be had to ſudorifics. — Repeated doſes of *James's Powder*, effervescent draughts, and plentifully diluting with barley-water, or balm, or mint tea, generally ſoon remove it.

An intermiſſion being procured, bark, in ſubſtance, is immediately to be given, and repeated every hour, in dram doſes, if the ſtomach will bear it, until twelve drams have been taken; which is generally a ſufficient ſecurity againſt the progreſs of the diſeaſe. But it muſt ſtill be continued, at longer intervals, for many days; interpoſing mild cathartics, ſuch as an infuſion of rhubarb and tamarinds, with, or without, a ſmall quantity of ſal polychreſt, or by keeping the body from a coſtive ſtate, by glyſters.

HIP-

HIPPOCRATES, who ſeldom ſuppreſſed diſeaſes, or took them intirely out of the hands of nature, in the manner P. ÆGINETA treated the cauſus, apprehended a relapſe, or ſome troubleſome complaint after a diſeaſe, where all the circumſtances had not appeared, which were ſuppoſed neceſſary to conſtitute a perfect criſis.

He ſays, of what GALEN calls the *genuine* cauſus *, that unleſs a ſolution happen by bleeding from the noſe, or by ſweats, with white thick ſedimentitious urine, or by an abſceſs, a relapſe will follow; or pains in the back, or legs, with thick expectoration, if the patient recover: and that in the *ſpurious* cauſus †, which is attended with a coldneſs of the extremities, but not with a black tongue, a criſis never happens without ſome of theſe, or other determinate ſymptoms, having firſt taken place ‡.

* Rariſſimum eſt per abſceſſum judicari cauſum.
GALEN. Com. 4. in lib. HIPP. de Acut. Morb. Vict. Art. 11.

† Solvantur per abſceſſus magis, quam per excretiones, quæ ex pituita putreſcente oriuntur febres.
GALEN. Com. 4. in lib. HIPP. de Acut. Morb. Vict. Art. 15.

‡ Cauſus hic, niſi ſanguis è naribus fluxerit, aut circa collum abſceſſus, aut crurum dolor oboriatur, et æger ſputa craſſa expuerit (hæc autem ſuppreſſa alvo contingunt) aut coxam dolor, aut pudendi livor, non judicatur. Teſticulus quoque intenſus, judicatorius exiſtit.
De Acut. Morb. Victu, Sect 4. Art. 15.

But

But the ancients had not the Peruvian bark, which, if good, and given in a proper quantity during a fair intermiſſion, though none of their critical ſymptoms ſhall have happened, modern practitioners conſider their patient in perfect ſecurity.

In the ſecond ſtage, or *Metaptoſis* of this fever, which I believe will ſeldom happen where the preceding directions have been faithfully purſued; we muſt draw a diſtinct line or boundary, in the very beginning of it, and put a final period to bleeding. In this alarming ſtate, all the ſkill and power of phyſic muſt be ſummoned up, and quickly too, to oppoſe the various breaches which the diſeaſe is now making, for the entrance of death.

The ſtrength now begins to fail; the pulſe is ſinking; the ſuffuſion of yellowneſs is perceived in the eyes, neck and breaſt; the vomiting inceſſant, and the ſtomach rejects every thing that is ſwallowed. A coldneſs here, not ſucceeded by ſweat, or bilious diſcharges, is almoſt a certain mortal ſymptom.

In this ſtate nothing but purging can remove the vomiting, and ſave the patient's life.

Here

Here the corruption of the humours begins, and the ſtools are acrid, corroſive, and fœtid to an extraordinary degree.

The misfortune here is, that the ſtomach retaining nothing, without great difficulty, oppoſes all our attempts. The tartarum vitriolatum, or ſal polychreſt, is a naufeous medicine; but there is no other proper medicine of which a ſmall quantity will purge; which is the objection againſt tamarinds, cream of tartar, and manna. Nor is there any other, that I have ever found, equally cooling and attenuating. It muſt be given; and though part of it will be returned, yet ſome of it will remain; and by repeating a very ſmall quantity every hour, ſtools will in time be procured, and generally urine, plentifully. If the patient have five or ſix ſtools, the vomiting will ceaſe. He muſt dilute with weak chicken-broth.

Glyſters may aſſiſt, with warm fomentations frequently applied to the region of the præcordia, which ſometimes bring out a crop of acrid eruptions about the pit of the ſtomach, on which the vomiting generally ceaſes; but in caſe theſe attempts fail, the patient ſhould be put into a tepid bath, and have a bliſter applied to his back, or to the inſide of his thighs,

or,

or, what is more effectual, to the region of the ſtomach; and a diaphoretic treatment ſhould be adopted, with *James's Powder*, in order to relieve the internal irritation by revulſion, and enable the ſtomach to bear purgatives, which alone can carry off the offending humours, and remove that perverſion, as it were, of the periſtaltic motion, which is the ungovernable circumſtance, and by its continuance, the moſt certainly mortal ſymptom of this fever.

It is in vain to think of bark, and antiſeptics, though the approach of ſphacelation be evident. It is in vain to harraſs the miſerable patient with vitriolic acid, and a multitude of naufeous and tormenting drugs. If ſtools can be procured, and the bowels kept conſtantly looſe, ſo that the acrid and putrid colluvies are carried off, as faſt as they are ſecreted from the diſeaſed maſs, that the ſtomach may be preſerved, and able to retain bark, the diſeaſe may be conquered: if not, the patient will.

As to what is called fever, there is nothing, after the firſt ſtage of the diſeaſe, which deſerves that name. Therefore, after the firſt ſtage, bark is always to be given, when the ſtomach will bear it. The worſt evil that generally attends giving bark here a little too early, is oppreſſion and load at the ſtomach; which if glyſters do not remove, the pur-

purgative ſolution, or a watery infuſion of rhubarb, will; or the uniting ſome purgative medicine with the bark.

Sometimes, ſoon after the firſt attack of the fever, an abatement of every ſymptom is obtained; and thoſe who are not well acquainted with the pulſe, and what extenſive evacuations this fever demands, conclude that a remiſſion, or an intermiſſion, or a ſolution of the fever, is decided. But when this happens before the third day, a ſtrict attention to the pulſe and the excretions, will diſcover the deception; and ſhew, by their diſagreement with thoſe ſymptoms which appear favourable, that they appear ſo without a proper cauſe, and cannot be laſting.

They who unfortunately make any dependance here, deſiſt from farther evacuations, and proceed to giving bark, and cordial nouriſhment. Every perſon about the patient is filled with flattering hopes of his recovery. But the evacuations have been diſcontinued too ſoon, and have not been ſufficient to extinguiſh intirely the inflammatory diſpoſition of the diſeaſe;—which now aggravated, breaks out, and rages with redoubled violence, and hurries the patient into

the ſecond ſtage of the diſeaſe, and then ſoon out of the world.

This circumſtance of the endemial cauſus, I believe, has never been noticed before. They who have miſtaken the *Bilious Remittent*, for the cauſus, conſequently ſpeak of remiſſions, which do not happen in this fever.

Some of the ancients juſtly referred all continued fevers, to ſome ſpecies of intermittent.

Aetius ſays, a cauſus which exacerbates every day, is a ſpecies of quotidian; that which exacerbates every other day, of a tertian, &c. and the difference only is, that the cauſus never comes on with rigor, nor intermits:—but when it exacerbates every other day, there is diminution of fever, like a remiſſion *.

Theſe remarks are of infinite importance in hot climates, and if rightly underſtood, point out the different times for evacuations, or for uſing ſtimulants and bliſters to advantage, and for making exertions for intermiſſions, where ſpontaneous criſes are not to be expected: and

* Tetrab. 2. Serm. 1, Cap. 77.

though

though what CELSUS obſerves in fevers *, often happens in hot climates, that the acceſſions are ſo confounded, that neither their coming on, nor their duration, can be correctly aſcertained, yet it ſeldoms happens in continued fevers, that one, and oftener two exacerbations, are not perceived within the nycthemeron.

Great caution is to be obſerved, when the yellowneſs which is critical, diſcovered in the eyes, on the third and fourth day, and a general ſuffuſion over the whole body, that the ſame treatment is not purſued, which is neceſſary, where that appearance is ſymptomatical.

Yet I do not ſee how TOWNE could ſay, that, "the regular criſis of this fever generally diſcovers itſelf by a ſuffuſion of bile all over the ſurface of the whole body about the third day †." Nor why HILLARY ſhould ſay, "this total yellowneſs is ſo far from being an encouraging prognoſtic, that it moſt commonly, on the contrary, proves a mortal ſymptom ‡." Oppoſite as theſe two opinions are, they are

* Lib. III. Cap. 3.
† Page 23.
‡ Page 149.

neither right, as they ſtand thus unqualified, for truth lies between them.

A yellow ſuffuſion may be either critical, or ſymptomatical. Critical, as TOWNE ſuppoſes, but it muſt be when there is a tranquil ceſſation, without languor, of all the other ſymptoms, with warm perſpiration :—and ſymptomatical, as HILLARY ſuppoſes, when accompanied with laſſitude, nauſea, or vomiting, colliquative ſweats, and ſunk pulſe.

The caſe in my opinion, ſtands exactly thus, notwithſtanding HILLARY's idea that the yellowneſs cannot be critical, ſhould it appear before the eighth or ninth day. Perhaps HILLARY had in contemplation what has been often quoted, and very properly, in European climates, as a general axiom *.

But HILLARY muſt often have had opportunities, which perhaps he had forgotten, to know, that his contradiction of TOWNE was ill-founded.

Great diſputes have ariſen in this part of the diſeaſe, concerning the application of bliſters.

* Quibus per febres ante ſeptimum diem aurigines oboriuntur, malum. HIPPOCRAT. Aphor. 62, Sect, 4.

TOWNE

Towne is ſtrenuous in opinion for them; and Hillary as ſtrenuous againſt them.

Towne ſays, "Bliſters are alſo of great moment and efficacy at this juncture, and are therefore not to be forborne any longer. The bile being now afloat, is to be diſcharged by every out-let, *qua data porta ruit.* It is almoſt incredible what large quantities of this juice may be evacuated by the external uſe of *Cantharides:* for their ſalts entering now, and mixing with the maſs of blood, diſſolve and attenuate the viſcid particles, prevent the growing lentor, and by their cauſtic quality, open the mouths of the veſſels for their expulſion. Another great benefit we gain from bliſters, is the tendency they have to the bladder, by which means another plentiful diſcharge of the redundant bile is obtained; for by the precipitating, if I may uſe the expreſſion, thoſe particles to the urinary organs, they throw off abundance of them by that ſecretion. I can affirm from experience, that when they have been applied before it is too late, a coma, the deadly ſymptom of this diſtemper, has very rarely enſued*."

* Page 26.

HILLARY obſerves that the unreaſonable fondneſs which people in Barbadoes have for bliſters, gave him too often an opportunity of ſeeing their bad effects, eſpecially in this fever. He ſays, "I have obſerved that the coma, tremors, ſubſultus tendinum, the coldneſs of the extreme parts, and the low pulſe (though this ſometimes has been rendered a little quicker, but not more full), have not only not been relieved by their application, but have been increaſed thereby, and the hæmorrhage which uſually attends the fever, has been haſtened on, or if come on before, it has been increaſed on their application; and I have ſeen a veſicatory which I ordered to be taken off, as I uſually do as ſoon as I come, in this fever, that the part where it was laid was turned black, and perfectly ſphacelated, and if the ſpine, and ends of the ribs had not hindered, a large ſquare paſſage into the thorax would have been opened, if the patient had lived a few hours after it; but he died two hours after I came; and the reflection, that I have never ordered any veſicatories to be applied in this fever, and have always ſtrictly forbidden their application in it, I muſt ſay, gives me great ſatisfaction *."

* Page 170.

It

It is hardly poſſible to conceive how theſe opinions, like the former, ſo directly oppoſite, and yet both ſo ſyſtematically erroneous, ſhould eave eſcaped two men who had many opportunities of deciding with more preciſion on the effects of bliſter. But falſe theory perſuaded one; and falſe theory deterred the other.

If bliſters had that effect on the body which either of theſe phyſicians aſſert, they would certainly be improper in this fever. Their "ſalts entering and mixing with the maſs of blood, and diſſolving and attenuating its viſcid particles," would be a bad argument for uſing them in this ſtate of the fever; nor would the quantity of bile evacuated by them, be of much ſignification, if there were no better reaſons. Neither do they "cauſe the part on which they are laid to ſphacelate and turn black, and open paſſages into the thorax," which HILLARY ought to have known, was only an index of the general mortified condition of the patient's whole body, pointing directly to death; which bliſters could neither retard, nor accelerate.

People in the Weſt-Indies are, as HILLARY obſerves, remarkably fond of applying bliſters in every diſorder.

Bliſters are found to be a ſafe and powerful remedy. Natives, and long reſidents in the Weſt-Indies, are ſeldom diſturbed by inflammatory diſeaſes; and bliſters can ſcarcely ever be applied amiſs. They form a drain for the acrid ſerum of the blood, and give a ſtimulus to the languid veſſels, which often keep up diſorders from debility, obſtruction, and irritability.

If bleeding, purging, baths, and diaphoretics, do not remove the fever in its firſt ſtage :—

If purging, baths, diaphoretics, and bliſters, do not remove it in the ſecond ſtage :—

If the vomiting cannot be ſuppreſſed, and bark retained :—

The laſt ſtage of the diſeaſe appears with its direful vomiting; which at firſt has generally the appearances of the grounds of coffee; then that of a ſlate colour; and then dark, thick, and grumous. The interior ſurfaces of the body are all oozing out blood into their cavities.—Every excretion is corrupted blood.

I have

I have ſeen people recover after the vomiting has reſembled coffee-grounds, when any purgative medicine united with a decoction of bark, could be made to paſs downwards, that the unnatural actions of the ſtomach were reſpited; and the ſtate of that organ, and the bowels, ſo relieved, that bark could be taken with any effect, from the power of the internal abſorbents being reſtored, which had been ſubverted by inceſſant vomiting. For in this ſtate of the vomiting, the rupture of the interior veſſels is only partial, and the demolition of the ſtomach and inteſtinal tube only commencing; and though the proſpect is very gloomy, there are ſtill ſome rays of hope.

But when this ſtate has continued for many hours, and the internal hæmorrhage becomes general, the ſtomach and bowels have loſt all power of reſtricting the blood-veſſels; the bond of union between the ſolids and fluids, is diſſolved, and the vital principle is too much ſunk ever to be raiſed. Then black gangrenous, mortified blood, is diſcharged upwards and downwards, and there are no hopes of life *.

* "Quibus per morbos acutos . . . . . bilis atra, aut velut ſanguis niger ſubierit, ii poſtridie moriuntur."

HIPPOCRAT. Aphor. 23. Sect. 4.

The

The application of bark and vinegar in baths, fomentations and cataplaſms; ſinapiſms and acrid cataplaſms to the feet; camphire, ſnake-root, and cordial antiſeptics, have been ſometimes of ſervice, even here, as many practitioners have ſaid: and therefore, though I am of a different opinion, they ſhould not be omitted.

I ſhould not have thought it neceſſary to mention even the name of *Opium* in this fever, had not HILLARY adviſed it, and others raſhly followed his advice in giving it, to check the vomiting in the beginning of the diſeaſe.

In a fever ſo highly inflammatory, with the ſtomach in a conſtant ſtate of inflammation, and the contents of the whole alimentary canal ſo hot, and acrid, it muſt be, what I believe it often has been, a fatal medicine.

TRALLIAN is of opinion, where there is great watchfulneſs in the cauſus, that opiates ſhould be given; "quippe ſomnum inducunt, et febrium vehementiam ardoremque obtundunt;" but our cauſus admits of no ſuch remedy, as an anti-emetic, and ſoporifics are injurious.

In

In regard to regimen, during the firſt three or four days,—thin, ſoft, cooling drinks, emulſions, and chicken broth, beſides the medicines, will be as much as the ſtomach can ſuſtain, even were any thing elſe neceſſary. After the criſis, or after the firſt ſtage of the diſeaſe, panada, gruel, and ſago are the moſt proper articles for nouriſhment; with the addition of a ſpoonful of Madeira wine, where the patient is weak, languid, and exhauſted. Wine cheriſhes the ſtomach, and acts as a cordial, mixed with theſe nouriſhments: but if it be given any other way, it affects the head, and heats the patient. Wine, where it is neceſſary, ſhould be uſed in the ſame manner in all fevers.

The laſt patient I ſaw, in the laſt ſtage of the yellow fever, was captain *Mawhood* of the 85th regiment, at *Port Royal*, in Jamaica, on the 24th of September, 1780. It was on the fourth day of his illneſs; he had been in the iſland ſeven weeks.

I arrived at the lodgings of this much-eſteemed young man, about four hours before his death. When I entered the room, he was vomiting a black, muddy cruor, and was bleed-

bleeding at the noſe. A bloody ichor was oozing from the corners of his eyes, and from his mouth and gums. His face was beſmeared with blood, and with the dulneſs of his eyes, it preſented a moſt diſtreſſing contraſt to his natural viſage. His abdomen was ſwelled, and inflated prodigiouſly. His body was all over of a deep yellow, interſperſed with livid ſpots. His hands and feet were of a livid hue. Every part of him was cold, excepting about his heart. He had a deep, ſtrong hiccup, but neither delirium nor coma; and was, at my firſt ſeeing him, as I thought, in his perfect ſenſes. He looked at the changed appearance of his ſkin, and expreſſed, though he could not ſpeak, by his ſad countenance, that he knew life was ſoon to yield up her citadel, now abandoning the reſt of his body. Exhauſted with vomiting, he at laſt was ſuffocated with the blood he was endeavouring to bring up, and expired.

ON THE

TETANUS,

OR

LOCKED-JAW.

WHETHER the exceſs of credulity, or downright infidelity, be moſt derogatory from ſcience, is a queſtion in phyſic, difficult, I believe, for medical caſuiſts themſelves to determine.

Exempt from the prejudice of extremes, a prudent phyſician will take a middle ground, and arm himſelf with a certain portion of pyrrhoniſm

rhoniſm upon moſt occaſions:—and particularly in applying the theory and doctrines of thoſe who have furniſhed the world with hiſtories of ſpaſmodical affections. *Sic veris falſa remiſcent.*

The Greek phyſicians have diſtinguiſhed general, or univerſal rigid ſpaſm (Σπασμος, *Convulſio*, *Contractio*, *Diſtentio Nervorum*) in which the muſcles of the neck were affected, by the name of τετανος; which was ſubdivided, according to the parts farther affected, into οπισθοτονος, and εμπροσθοτονος. GALEN every where makes the ſame diſtinction *.

When the neck, body, arms, and legs were ſtraight, rigid, and inflexible, with the mouth faſtened, that ſtate was called a *Tetanos*.

When the neck and thorax were thruſt forward, and the body curved and bent backward, with the hands clinched, and the arms and legs rigid, contracted, and drawn backward, that was called an *Opiſthotonos*.

When the head was bowed forward, and the chin fixed to the ſternum, with the thorax de-

* Introductio ſeu Medicus, Cap. 13.

preſſed,

preſſed, the ſpine of the neck and thorax gibbous, the hips turned outward, the hands clinched, and the legs extended, that was called an *Emproſthotonos*.

The general name, however, was *Tetanos*; which CELSUS calls *Rigor Nervorum* *, and ſubdivides it according to the Greeks †. We have adopted the word *Tetanus* from the Latin writers, in our language, but more commonly that of the *Locked-Jaw*.

All nations have preſerved the ancient diviſion of the *Tetanus* into three ſpecies; which have been handed down from generation to generation, and admitted into the rank of diſeaſes, without any examination, or ſuſpicion that the ſubject was queſtionable.

Notwithſtanding theſe diviſions, deſcriptive of three diſtinct ſpecies of original ſpaſm, I think, ſuppoſing the three affections really exiſted, that they ought not to be conſidered as ſeparate ſpecies, but as different degrees of uni-

* Lib. II. Cap. 1.

† Modo caput ſcapulis, modo mentum pectori adnectit, modo rectam & immobilem cervicem intendit. Lib. 4. Cap. 3.

verſal

verſal ſpaſm, or *Tetanus*;—the extreme degree of which conſtitutes the *Opiſthotonus*.

HILLARY reverſes the fact, when he ſays, "the tetany may be eſteemed only a greater and more univerſal extended degree of the opiſthotonos."

There can be no ſuch thing as what SYLVIUS calls *convulſio ſemi-univerſalis*, to which he attributes the opiſthotonus, and emproſthotonus *.

There are partial ſpaſms, and cramps, every perſon knows; and particular muſcles may be affected, as in the *Spaſmus Cynicus*, *Tortura*, *Riſus Sardonicus*, *Triſmus*, and *Strabiſmus*.

Hyſterical people are ſubject to ſpaſms in every muſcle of the body. The mouth, as in the locked-jaw, is often affected; deglutition impeded; and a variety of fixed poſitions, and involuntary actions, are produced, whoſe deſcriptions are infinite.

WILLIS inſtances a curious caſe, in which every part of a woman's body was convulſed,

* Prax. Med. Lib. II. Cap. 3.

or

or rendered ſtiff and rigid, by turns. Sometimes her head was turned to the right ſide, then to the left, then backward, as in the opiſthotonus, then forward, as in the emproſthotonus. She was always relieved by the fumes of tobacco, blown up her noſtrils; but the ſpaſms always returned in ſome place or other, ſoon after that remedy was deſiſted from *.

This is ſomething like what LIND relates to have happened, in a caſe which he calls an *Opiſthotonus*, at Haſlar hoſpital. He ſays, "it was remarkable, that an application of opium and camphire to the feet, inſtantly removed the ſpaſm; which, upon taking off the application, immediately returned, with its former violence. An effect which was ſeveral times produced by the repeated application of theſe medicines †."

Such a ſimple affection, or partial rigidity of the muſcles of the neck, was the caſe of a patient mentioned by FORRESTUS, which he calls an *Emproſthotonus*;—for he ſays the woman "came to him" for advice: and as he gave her only an inſignificant ointment, to apply to the parts, and ſays the caſe did not

* De Motu Muſculari. † Page 128.

prove fatal, it could not be a very ſerious diſorder *.

I believe there is no other *Emproſthotonus* than theſe kinds of partial nervous affections; and what has been defined as ſuch, as a general muſcular ſpaſmodic diſeaſe, in my opinion, never had exiſtence; for of nearly an hundred people that I have ſeen periſh by the *Tetanus*, from wounds and accidents in the Weſt-Indies, I never ſaw any thing like what is called an *Emproſthotonus*. I have alſo inquired among the oldeſt practitioners there, and no one ever ſaw it. Nor do I believe that any practical writer of reputation pretends to have ſeen it. I obſerved, though I did not mention it in the firſt edition of this book, that LIND ſays, in a long courſe of practice in England, he has ſeen the *Emproſthotonus* †; and I have been told that a decided caſe of it, has come within the knowledge of another perſon‡. Should my infidelity remain, it extends not to impeach the veracity of any man. I know, as I am the only perſon who has expunged the name of *Emproſthotonus* from the noſological inventory, that neither my authority, nor

* Lib. X. Obſ. 113. † Page 281.

‡ Critical Review, for February 1788.

what

what I have already ſaid, would be ſufficient to diſprove the exiſtence of the diſeaſe, were it poſſible it could exiſt, according to the laws of phyſiology.—That it cannot, I will demonſtrate preſently.

It is ſingular that ETMULLER ſhould inſiſt that HIPPOCRATES means the *Emproſthotonus* *, in the 35th Aphoriſm of the 4th Section, where he ſays, "In a fever where there is a ſudden perverſion of the neck, with difficulty of ſwallowing, without any tumor, it is fatal."

Others inſiſt that the *Emproſthotonus* is meant where HIPPOCRATES ſpeaks of *Tetani* about the loins †; but that cannot be, becauſe HIPPOCRATES ſays, thoſe convulſions proceeding from atrabilarious humours, cauſing obſtructions, are cured by bleeding. Nor does the ſubſequent paſſage confirm that to be his meaning there ‡.

He ſays, in one place, that there are two or three ſorts of *Tetani* §, but he deſcribes only

* De Spirit. Animal. Vitioſo Motu, Cap. 9.

† Τετανοι δε οσφυος. Lib. de Acutorum Morborum Victu, Sect. 4. Art. 73.

‡ Οκοταν δε απο των τενοντων σφοδρως εμπροσθεν αντιστωνται, &c. Ibid. Sect. 4. Art. 74.

§ Τετανει δυο ἡ τρεις. Lib. de Dieb. Judicat. Cap. 3.

the *Tetanus* and *Opiſthotonus*; and in another place he ſays, that there are three ſorts of *Tetani* *, but here he is more explicit; and after deſcribing the *Tetanus* and *Opiſthotonus*, he ſays the *other Tetanus* † is leſs fatal than the former; and that in this, the whole body is convulſed, but that it ſometimes affects only ſome particular part; and that the patient walks about at firſt, then takes to his bed; and when the pains and ſpaſms abate, he riſes, and perhaps walks up and down for a few days; and is afterwards attacked with the ſame pains, and alſo with a difficulty in ſwallowing his food, and perhaps ſuffocation. But the methods uſed in the other *Tetani*, and a glyſter of cremor of boiled ptiſan and honey, ſpeedily cure this diſeaſe.

It is unneceſſery to give a minute detail of the ſymptoms of the *Tetanus*; the direful train of evils already mentioned, ſufficiently characterize it, and are well known to practitioners.

There have been many incorrect, deficient, and ſuperfluous accounts of this diſeaſe; but to the honour of the great father of phyſic, there has never been one ſo diſtinct and plain, as

* Τετανοι τρεις. Lib. de Internis Affect. Cap. 54.

† Αλλος τετανος. Ibid. Cap. 56.

that

that which he has given us, in his third book *De Morbis*; and alſo in his book *De Diebus Judicatoriis*, which he repeats in his book *De Internis Affectionibus*.

Many writers have given deſcriptions that have more the air of curioſity than of ſcience. They have drawn the diſeaſe with ſome minute lines which ſeldom or never appear, and have omitted ſome of its real pathognomonical ſtrong lineaments. That is not the caſe with HIPPOCRATES.

It ſeems to me, that CHALMERS, of South Carolina, had never read any thing more of what HIPPOCRATES ſays of this diſeaſe, than the three caſes of *Opiſthotonus*, in the fifth book of Epidemics. Otherwiſe it is impoſſible he ſhould have ſaid, that there has not been "any thing like a full deſcription given of the diſeaſe, by any ancient or modern author;" and "that the few ſymptoms HIPPOCRATES recounts, do not ſhew themſelves with us *."

So far is this remark from being juſt, that I never ſaw the diſeaſe without every ſymptom HIPPOCRATES recounts in the third book *De Morbis:* nay, ſuch are his accuracy and diſcri-

* London Medical Obſervations and Enquiries, Vol. I. p. 89.

mination, that no one but himſelf, among the ancients, has noticed the principal pathognomonic, which, beſides the bending of the body, diſtinguiſhes the *Opiſthotonus* from the *Tetanus*; and the moderns who have noticed it, have not made the diſtinction. This is,—on the return of the ſpaſm, after a temporary remiſſion, in the *Opiſthotonus*, the patient is ſo ſtrongly convulſed, by the ſudden contraction of all the muſcles at once, that he ſprings up in the bed, and without great care will be forced intirely out of it, on the floor.

On viſiting people in this diſorder, I have often found them upon the ground, when their attendants have neglected them.

The leaſt touch of the body, or any ſudden emotion, or noiſe, or ſurpriſe, will bring on the ſpaſms when they have remitted. Once, as I entered the hut of a negro belonging to Mr. *Thomas Bond*, in Kingſton, the man had got up in one of theſe remiſſions, in an *Opiſthotonus*, and was ſtanding on the floor, leaning againſt his bed. On my ſpeaking to him, he was ſuddenly ſeized with a violent contraction of all the muſcles, which curved his body like a bow, and he ſprang up from the ground, and pitched backwards, with his head foremoſt, nearly three yards from the place

where he ſtood, among ſome earthen pots that were in a corner of his hut. By the fall he cut his head very much, and divided the temporal artery: he died within two hours. It was the third day of the diſeaſe; the cauſe of which was not aſcertained.

ARETÆUS and CÆLIUS AURELIANUS, who have given the moſt minute deſcriptions of the diſeaſe, have both omitted this circumſtance: and CÆLIUS AURELIANUS only quotes HIPPOCRATES for the clinching of the hand in the *Opiſthotonus*, as if he had never ſeen it himſelf. Though this, in which HIPPOCRATES ſays, the thumb is often locked in the hand by the fingers, is another almoſt invariable ſign in the *Opiſthotonus*, yet CHALMERS ſays, "the wriſts and fingers ſeem not to be affected."

There are here, as in other diſeaſes, different ſymptoms in different habits. But when the patient is not plethoric, nor of an inflammatory tendency, though breathing be interrupted during the ſpaſms, the pulſe, in general, is nearly as regular as in health; and the patient remains in his perfect ſenſes to the laſt: when he is demoliſhed by catalyſis, or cut off, by a great convulſion, which at once ſubverts both the vital and animal functions.

The reaſons for my aſſerting that the *Opiſthotonus* is the extreme degree of *Tetanus*, are founded on the ſame principles, which ſupport my opinion, that there is no ſuch diſeaſe as an *Emproſthotonus*, as a muſcular and peculiar degree of univerſal ſpaſm.

When the fibres of all the muſcles of the body are put to their extreme exertion, the cervical, dorſal, and poſterior muſcles, being more in quantity, have too much power to be reſiſted by the anterior muſcles, and the body is bent backwards; as the flexors of the hands are too powerful for the extenſors, and therefore the hands are clinched.

All the anterior muſcles are exerted to their utmoſt in the *Opiſthotonus*; but thoſe that make the moſt reſiſtance againſt their poſterior antagoniſts, are the *Maſtoidei* of the neck, and the *Recti* of the abdomen. Theſe are ſwelled up, and are as hard to the feel, and as rigid, as pieces of wood.

This refutes SYLVIUS's notion of *ſemi-univerſal* ſpaſm, as far as relates to the anterior and poſterior parts of the body. For if the nerves endue the muſcles with energy, the anterior muſcles

muſcles can never be univerſally affected without the poſterior muſcles. It is otherwiſe in reſpect to the lateral muſcles; the ſides may be affected ſeparately, from the diſtribution of the nerves, as we obſerve in the *Hemiplegia*.

MORGAGNI inſtances a caſe of *Tetanus*, which on the morning of the patient's death, the fifth day, ceaſed from being univerſal, and the ſpaſms and rigidity continued only on one ſide of him; conſtituting what is called the *Pleurothotonus*. He mentions this, becauſe MERCURIALIS aſſerts, that a *lateral Tetanus* cannot happen, and only the three ſpecies before mentioned *.

I am of the ſame opinion as MERCURIALIS, as far as relates to original *Pleurothotoni*; for nothing is proved by MORGAGNI's caſe, but that the univerſal paralyſis which generally precedes death in the tetanus, here commenced in an hemiplegia.

All writers mention the pathognomonic pain, and ſpaſm under the ſternum; and HIPPOCRATES himſelf mentions violent pains, in general, which attend this diſeaſe. It ſeems conformable to reaſon, that it ſhould never be

* Letter X. Article 2.

other-

otherwiſe ; but it is otherwiſe frequently. I have known people in the *Tetanus* with the ſweat running off them from the agonizing pulling of the muſcles, who have nevertheleſs told me, though they felt a diſtreſs, which they could not deſcribe, yet they could not ſay it was actual pain. Partial ſpaſm, every perſon who has been waked in the night with the cramp in the calf of the leg, knows to be ſevere pain ; but general ſpaſm is not ſo always.

It is evident what dependance the muſcles have on the nerves, being deſtitute of action, deprived of them. But, perhaps HALLER's opinion is better ſupported in this diſeaſe, than in any inſtance he has given, himſelf: and that there are great miſtakes concerning the ſeat, and effects of ſenſibility, and irritability.

HALLER places ſenſibility in nervous, and irritability in muſcular, parts.

I have loſt many patients in the *Locked-jaw* after amputations ; and never found leaving out the nerves, or whether ligatures were made, or not, cauſed the ſmalleſt difference in the event ; nor were any ſecurity againſt the *Locked-*

Locked-Jaw, nor diminiſhed the ſymptomatic fever.

How far the ſenſibility of the nerves, or the irritability of the muſcles are concerned in the *Tetanus*, or how the muſcles ſhould act in ſympathy, without the nerves appearing to be any way affected, is, I believe, in as much obſcurity, as GALEN's "principalis animæ vis."

The *Locked-Jaw* appears to be a diſeaſe intirely of irritability. Negroes, who are moſt ſubject to it, whatever the cauſe may be, are void of ſenſibility to a ſurpriſing degree. They are not ſubject to nervous diſeaſes. They ſleep ſound in every diſeaſe; nor does any mental diſturbance ever keep them awake. They bear chirurgical operations much better than white people: and what would be the cauſe of inſupportable pain to a white man, a Negro would almoſt diſregard. I have amputated the legs of many Negroes, who have held the upper part of the limb themſelves.

The Algerines and Moroccans are as much diſtinguiſhed for privation of ſenſibility, as Negroes. This, writers of romance attribute to heroiſm, and greatneſs of ſoul.

Mr.

Mr. *James Matra*, now the Engliſh conſul at Morocco, in a letter I received from him, dated at *Tangiers*, on the 20th of December 1787, corroborates the fact. He ſays, "the uſual puniſhment of the Moroccans, is cutting off the hands and feet. The operation is performed with a knife, frequently by a butcher, and always in a very ſlovenly manner. He takes the hand or foot in one hand, and hacks at the joint till it is off. The ſtump is immediately dipped in a kettle of hot pitch, and never has any other dreſſing; yet it is but very rarely that any of them die;—and the ſtump looks as well when healed, as if the operation had been performed by the moſt ſkilful ſurgeon. I have ſeen ſeveral undergo this puniſhment; they went through the operation, with an indifference, that is aſtoniſhing; for by their countenance you would think they were ſhaking hands with the executioner."

Suſceptibility of the *Tetanus*, whether original or ſymptomatic, does not depend on age, nor ſex; neither is it confined to the human ſpecies. Every ſpecies of animal is ſubject to it. I have ſeen many horſes die of it. It ariſes in animals from many of the ſame cauſes that produce it in human beings.

Of

Of the obvious cauſes of the *Tetanus*, in the human race, bruiſes, wounds, particularly of the toes and fingers, fractures, diſlocations, miſcarriage, worms, amputations, trepanning, obſtructed perſpiration, and ſleeping in wet clothes, or in the cold night air, are the principal.

Painful injuries are not ſo often the cauſe of the *Tetanus*, as thoſe which are more trivial. I have known many inſtances where it has been cauſed by a ſlight lacerated wound on a finger, or toe; but never one from the ſevereſt flogging, in military puniſhment. No pain, however excruciating, excited on the ſurface of the body, from the great ſenſibility of the ſkin, is capable of producing it. I have ſeen it cauſed by muſcular irritation, where no conſiderable branch of a nerve was near the part.

HIPPOCRATES ſays, all ſpaſms are cauſed either by repletion, or inanition *.

As to the cure of the different degrees of *Tetanus*, making allowance for habit, age, and conſtitution, they are, as CELSUS obſerves, all

* Aphor. 39, Sect. 6.

to

to be treated in the ſame manner. And this treatment ſtands juſt where it did in the time of HIPPOCRATES. All that has been written about it ſince, amounts to nothing but unavailing words; and thoſe who fancy they have diſcovered a better method of treating this diſeaſe than may be collected from HIPPOCRATES, ARETÆUS, CELSUS, and ÆGINETA, have deceived themſelves, and all who have believed in them.

If it be urged that the application of mercurial frictions, is an invention of the moderns, in this diſeaſe, I anſwer, it is my opinion, that mercury uſed in the *Tetanus* has killed more people than it has cured. And farther, that I ſuſpect, thoſe who have recovered when this remedy has been uſed, would have recovered without it. For many people have been attacked by the *Tetanus*, in the Weſt-Indies, under a courſe of mercury.

HIPPOCRATES ſays, that diſeaſes from repletion muſt be cured by evacuations; and diſeaſes from inanition, by repletion *.

GALEN ſays, that ſpaſms from inanition are incurable: but when they ariſe from plethora,

* Aphor. 22, Sect. 2.

and

and inflammation, they are cured by evacuations*. In other reſpects he mentions nothing of conſequence, beſides the practice of HIPPOCRATES †.

All the patients HIPPOCRATES appears to have had under his care in the *Opiſthotonus* from wounds, died. And ſo, I believe, have all the patients that every other perſon has had, when the diſeaſe was complete, and cauſed by a wound.

The four caſes of *Opiſthotonus* which HIPPOCRATES relates in his fifth and ſeventh books of Epidemics, were from external injuries. One was from a ſlight wound below the neck behind; this patient died on the ſecond day of the diſeaſe. Another was from a contuſion and fracture of the fore-finger, and its metacarpal bone; inflammation, fever, and mortification came on; purging abated, ſome of the ſymptoms, and part of the finger fell off; after the ſeventh day the wound diſcharged a thin acrid ſanies; the patient was ſeized on the tenth day, and ſweated much, and died on the third day of the diſeaſe. Another was from a

* Methodi Medendi, Lib. XII. Cap. 8, et de Tremore, Palpitatione, Convulſione et Rigore, Cap. 8.

† Introduct. ſeu Medic. Cap. 13.

luxation,

luxation, or contuſion, of his great toe; this patient died on the third day of the diſeaſe *. The other was from applying ſome corroding medicine to a clean ulcer, on the leg, near the ancle, by the tendon; the day is not mentioned when this patient died.

He ſays in his Aphoriſms, that *Spaſm* happening after a wound is mortal †; and that thoſe who are ſeized with a *Tetanus* die within four days; or if they ſurvive the fourth day they recover ‡. CELSUS is of the ſame opinion §. But HIPPOCRATES, in another place, extends the period of danger to the third, fifth, ſeventh, or fourteenth day ||.

Many of the wounded men in the French ſquadrons laſt war, in the Eaſt and Weſt-Indies, died of the *Locked-Jaw*. It was remarked by the ſurgeons in *M. Dachè*'s fleet, that almoſt all the wounded men who were ſent on ſhore after the action, died of the *Locked-Jaw*, and but very few of thoſe who remained on-board the ſhips were attacked by it.

* I have ſaid *luxation* or *contuſion*, becauſe this caſe is twice related, with ſome variation. In the fifth book the text is στρεμμα, and in the ſeventh book it is τυμμα.

† Aphor. 2, Sect. 5.
‡ Aphor. 6, Sect. 5.
§ Lib. IV. Cap. 3.
|| De Morbis, Lib. III.

I never

I never found, after a wound, or a chirurgical operation, in the Weſt-Indies, that there was any time, until the patient was entirely well, exempted him from the inſult of this diſeaſe.

In 1772 I trepanned the ſkull of a young man, of the name of *Sheppard*, for a fracture, at Hope Eſtate, near Kingſton in Jamaica; the wound went on well, and every ſymptom was favourable. He was ſeized with a *Tetanus* thirty days after the operation, and died on the third day.

I never ſaved one patient who had a complete *Tetanus* after an operation; but have prevented many, I believe, by giving bark, as ſoon as poſſible, after every operation, with anodynes every night, and attending to the ſtate of the bowels. Bleeding often, purging occaſionally, and an extremely low diet, is the beſt ſecurity in fractured ſkulls, and injuries of the head. *Sheppard*'s tetanus was occaſioned by his imprudence. He walked out of the houſe, ate ſome ſalted herring, and drank ſome punch, on the day previous to his being attacked.

On the 12th of March, 1779, I was called to a man named *Mooſhel*, at *Daniel Gully*'s, a ſhipwright, in Kingſton, whoſe ſkull was fractured by a brick falling on his head. The ſcalp was not lacerated, but there was, beſides a ſtupor and vomiting, a ſoftneſs and ſwelling at the part, that determined me to expoſe the cranium to ſight; and to avoid, as I hoped, the error of the good, as well as great HIPPOCRATES *;—for the confeſſion of which miſtake, his candour has been ſo much admired by all ſucceeding ages †. I made a ſection of conſiderable extent, to embrace, as I thought, all the injury; that I might not be deceived by the ſutures, nor obliged to make a ſecond cutting. But to my great ſurpriſe, on removing what I had deſigned, I diſcovered ſuch a fracture as I never ſaw before, nor ſince. I took away eight pieces of broken bone, one of which was driven

* Epidemiorum, Lib. V. Art. 22.

† "A ſuturis ſe deceptum eſſe HIPPOCRATES memoriæ tradidit, more ſcilicet magnorum virorum, et fiduciam magnarum rerum habentium. Nam levia ingenia, quia nihil habent, nihil ſibi detrahunt. Magno ingenio, multaque, nihilominus habituro, convenit etiam ſimplex veri erroris confeſſio; precipueque in eo miniſterio, quod utilitatis cauſa poſteris traditur: ne qui decipiantur eadem ratione, qua quis ante deceptus eſt." CELSUS, Lib. VIII. Cap. 4.

two

two inches into the brain. A dram weight of the brain came out with the piece of bone, and a portion of the dura mater. The fracture was round the junction of the ſagittal and coronal ſutures, and took in part of the frontal, and both parietal bones. Pieces of each of theſe bones were taken away.

On the 15th I traced a long crack croſs the bone, from the ſagittal ſuture, and found it neceſſary to extend the removal of the ſcalp, by another ſection, and to apply the trepan at the extremity of the fiſſure, to elevate the depreſſion, and remove what bone was required, that the extent of the internal injury might be aſcertained, and the brain relieved. I took away from the upper angle of the left parietal bone only, as much, when put to the former pieces of the ſame bone, as made nearly a triangle, each ſide of which meaſured four inches.

The cauſe of this extraordinary miſchief, was not from the violence by which the brick fell, for it fell but a little diſtance from his head:—but it was owing to the extraordinary thinneſs of the ſkull bone, which ſcarcely exceeded the thickneſs of a line. The union of the tables was ſuch, that the diploe was ſcarcely diſ-

cernible. Several medical people, to whom I ſhewed the bones, and to whom this remarkable caſe was known, confeſſed they had never ſeen any thing like the thinneſs of the bone, except in children.

The operation from relieving the brain, and from the great loſs of blood, carried off the ſtupor and vomiting; which was kept under, and other untoward ſymptoms prevented, by glyſters, and purging the patient often. He was not plethoric, and from having loſt much blood at firſt, I did not find it neceſſary to bleed him afterwards, in the courſe of the cure.

A few days after the operation he became tetanic. I deſpaired of my patient, and believing no medicine could ſave him, I gave him none, except twenty-five drops of laudanum every night. This alarming appearance went off of itſelf in a few days, and a hemiplegia ſucceeded, which continued the ſame, through the whole of the cure; which was eight months in completing. I ſaw the man two years afterwards, and he had regained much of the uſe of his paralytic ſide. I attribute this man's eſcape to the effuſion of blood in the operation, and to the extraordinary di-

ligence

ligence and tenderneſs with which my pupil, Mr. *Lewis Hallam*, attended him afterwards, and dreſſed the wound.

Though I have but little expectation that there ever will be diſcovered any ſpecifical, and certain method of curing the *Tetanus*, I do not pretend to ſay a *Tetanus* will not yield to ſome kind of treatment. A ſlight one, from cold and obſtructed perſpiration, will. Sometimes even to a warm bath, and electricity: and often to diaphoretics with anodynes. When, as HIPPOCRATES ſays, the patient ſurvives the fourth, fifth, ſeventh, or fourteenth day, the diſeaſe, I believe, is almoſt always curable;—and I wonder writers ſhould lay ſo much ſtreſs, and think ſo much, of having cured a patient who has laboured under this diſeaſe for a fortnight, three weeks, or a month; knowing, as every perſon muſt who has practiſed long in the Weſt-Indies, that a mortal *Tetanus* is ſeldom or never a tedious one; and believing, that any *Tetanus* exceeding the time before mentioned, will abate ſpontaneouſly, without any medicine at all.

In 1776, I cured a *Captain Thompſon* (from America), in Kingſton, of a *Tetanus*, only by putting him into a warm bath, three times a

day, and giving him ſmall doſes (for that part of the world) of laudanum, and antimonial wine. This medicine kept up a great perſpiration, cauſed by the bath; which I judged to be the moſt proper method of treating a *Tetanus* as his was, from obſtructed perſpiration, from the night air. But he had the diſeaſe ten days. The next patient I treated in the ſame manner died.

The ſame apparent ſucceſs and diſappointment have been experienced from great quantities of bark and wine: theriaca and wine: mercurial frictions: muſk, camphire, and aſſafœtida.—Of ſaccharum ſaturni, which I have heard commended in this diſeaſe, I can only ſay, that I have never known it produce either good or harm. A man, to my knowledge, took ſix drams of the ſugar of lead in three days, in a *Locked-Jaw*, without producing any effect whatever.

I have frequently known the ſame thing from opium. The ſtomach will ſometimes bear a dram of opium every two or three hours, for three days together, without procuring ſleep, and without the diminution, and often without the alteration, of any one ſymptom. But here I muſt remark, that I never found any

any uſe from a large quantity of opium, where a ſmall quantity had not firſt produced ſome apparently good effect.

Practitioners, in countries where the *Locked-Jaw* is a common diſeaſe, have ſeldom found the ſame remedy to ſucceed twice, ſucceſſively. Chagrined with continual diſappointment, they fly to every thing that offers but the ſmalleſt hope, and are induced to try the powers of medicine, in doſes, that might ſurpriſe people practiſing in temperate climes: where, this ſtrong rigidity of the muſcles, which, if bent by force, would cauſe inſtant death, is ſeldom ſeen.

This has been done ſo often, with ſuch extent of poſological experience, that they read without improvement, thoſe inſtructions, that are given for the treatment of the *Tetanus*, which are fabricated in countries where the diſeaſe is almoſt unknown.

Lind ſays, "In a caſe of *Opiſthotonus* at Haſlar hoſpital, the extractum thebaicum was given, to the quantity of a ſcruple, in leſs than twenty-four hours;" and that opium ſhould be given at the ſame time mercurial friction and the warm bath are uſed, "to pro-

cure ſleep*."—The firſt remark would have been more coincident with the practice of thoſe who ſee the diſeaſe almoſt evey day, if the quantity of opium had been an ounce, inſtead of a ſcruple; and the latter, though the ſame error is countenanced by ÆGINETA, with their obſervations, if he had ſaid, that no quantity of opium whatever will, with any certainty, procure ſleep in an *Opiſthotonus*:—and that there are many doubts whether opium, given alone, has ever been of any utility.

Prevention is better than cure; and if, where the cure of diſeaſes is probable, and even certain, this precept is never violated without ſorrow, the miſery of neglecting it here, falls ſo heavy on the unhappy patient, that no ſkill nor attention afterwards, will be found equal to overtake, and make atonement for, the omiſſion.

When a wound or contuſion has been received, in the fingers or toes in particular, or when an amputation, or any other chirurgical operation has been performed, the ſymptomatic fever, and irritation of the wound, are to

* Pages 288, 289.

be

be removed as ſoon as poſſible, by aperients, or glyſters, with cooling and diluting medicines, anodynes, and a careful regimen. The patient at the ſame time is to be kept in a cool room; and the wound to be expeditiouſly brought to a ſtate of good digeſtion.

If the wound be a ſmall one, a poultice frequently renewed, over any ſoft and light dreſſing, is generally the beſt application, at firſt. If it be a large one, or from an amputation, the beſt dreſſing, until the ſwelling and inflammation are gone, is olive oil on pledgets of lint, with a warm digeſtive plaſter on tow, over all. Warm fomentations are to be uſed before the dreſſings; which, after the firſt dreſſing, muſt never be ſeldomer than once, and very often twice a day: and the wound is to be as little as poſſible expoſed to the air.

When the ſymptomatic fever has abated, bark is to be immediately given, and often repeated, and an anodyne every night; and let the appearance of the wound be what it may, bark ſhould always be given occaſionally until the patient is well: for I have often known, when the wound has been nearly healed, where the diſcharge has been always good, and no ſymptom of irritation appearing, that the

Locked-

Locked-Jaw has ſuddenly, and unexpectedly, come on, and deſtroyed the patient.

If the wound be in the hand or foot, from a ſplinter of wood, or a thorn, or a nail, or a piece of glaſs, a hot ſteam ſhould be applied to the part, at each dreſſing, which ſhould be a poultice. Dilatation is ſometimes neceſſary, where, in a deep wound, with a ſmall orifice, there is much heat, and pain, and no diſpoſition toward digeſtion; or making a tranſverſe inciſion down through a wound, where it is jagged, and the fibres and veſſels partially divided;—or if on a finger or a toe, amputating the part intirely, on the firſt appearance of any tetanic ſymptom;—and if a thin acrid ſanies be diſcharged, warm oil of turpentine, and hot digeſtives ſhould be applied; and bark be given in large doſes, often, with wine, where the conſtitution is ſunk, and the patient weak, or aged. Theſe are the beſt prophylactics againſt the *Locked-Jaw*.—Opiates externally applied, are not of the ſmalleſt utility, either in the prevention, or cure of a *Tetanus*.

Hippocrates ſays, that a fever, with white thick urine, is a critical ſolution of an opiſthotonus *; and that a fever coming on where

* Coac. Prænot. 362.

there

there is a *Spaſm* or *Tetanus*, removes the diſeaſe *. Practice confirms this to be true; and I have obſerved that an heat in the ſkin is always a favourable ſign, eſpecially if preceded by rigour.

Hippocrates, in order to raiſe an artificial fever, adviſes, pouring a great quantity of cold water upon the patient, and that, he ſays, recals the native heat; and heat cures the diſeaſe. The patient is to be covered lightly afterwards, and be kept cool, as he adviſes in another place, where this proceſs is again mentioned †.

But he gives a judicious caution, and Galen, in his comment upon the paſſage, does the ſame; that this practice muſt not be uſed but in ſummer time (this applies particularly to European climates); nor unleſs the patient be young, and of a full habit of body, and without an ulcer ‡. For it is evident, if the patient ſhould be old, infirm, and weak, that applying cold water, would rather extinguiſh, than increaſe the natural heat.

* Aphor. 57, Sect. 4.

† De Morbis, Lib. III. Cap. 12.

‡ Aphor. 21, Sect. 5.

He

He adviſes alſo, as a remedy, *Pepper* and *Black Hellebore*, to be taken in hot fat fowl broth; and ſtrong ſternutatories to be uſed; and the patient to be fomented; or warm and pinguious liquids to be applied in bladders all over his body; and he is to be well rubbed with a great quantity of warm oil, particularly on the parts moſt affected *.

He recommends, as another remedy, warm fomentations and unctuous frictions made, at ſome little diſtance from a fire; and warm things applied afterwards; and a fotus made of wormwood, or bay-leaves, or henbane ſeed, and frankincenſe, macerated in white wine, in an earthen pot, with an equal quantity of oil put to it, which being made hot, the head and body is to be well anointed with it. Afterwards the patient is to be covered, that he may ſweat profuſely; and to drink, if he can be made to ſwallow, otherwiſe it is to be put into his noſtrils, a mixture of warm honey and water; and alſo plentifully of good white wine. Theſe things are to be repeated every day †.

* De Morbis, Lib. III. Cap. 12.

† De Internis Affectionibus, Lib. Cap. 54.

He

He does not mention cupping; but ARETÆUS, CELSUS, AETIUS, ÆGINETA, and moſt other ancient writers, as well as the Arabians, adviſe it; ſome with ſcarifications, and ſome without; upon the neck, ſpine, breaſt, and parts moſt affected. P. ÆGINETA adviſes the parts to be covered with wool, wetted with oil; and where the diſeaſe has been of long duration, to put the patient into a tub of oil twice a day, but ſays he is not to remain long in it, as it will weaken him.

The remedy that has been found during the laſt fifty years, between the tropics, to ſucceed oftenеſt in this deplorable diſeaſe, is the cold water proceſs of HIPPOCRATES. But this remedy has been ſo imprudently and indiſcriminately uſed at Cayenne, Martinique, Hyſpaniola, and in the Engliſh Colonies, that it has fallen into diſrepute, as many have been killed ſuddenly by it. I ſuppoſe the want of ſucceſs, attending the improper application of cold water, made PAUL ÆGINETA ſo illiberal againſt this doctrine of HIPPOCRATES *.

* "At vero frigidæ affuſionem (velut HIPPOCRATES dicit) quum maxime temeraria ſit, et propterea à poſterioribus damnata, etiam nos reprobamus."

De Re Medica, Lib III. Cap. 20.

BAR-

BARRERE, a French phyſician, who practiſed at *Cayenne*, about the year 1740, ſpeaks of the application of cold water with the utmoſt confidence, "La précaution la plus ſûre, eſt d'arroſer les malades pluſieurs fois par jour avec de l'eau la plus fraîche qu'on puiſſe trouver, & ſur tout dès le moment que l'on s'apperçoit que les enfans ne peuvent téter qu'avec peine, & que leur mâchoire commence à ſe ſerrer. Il faut réiterer ces aſperſions, juſques à ce que ces facheux accidens ſoient diſſipés, & que les parties du corps ayent repris leur premiere ſoûpleſſe. Il eſt néceſſaire de ſoûtenir les forces du malade, ſurtout des grands perſonnes, par de bons bouillons, qu'il faut donner peu & ſouvent, dans l'intervale deſquels on doit leur faire prendre quelques cueillerées de vin."

With this method, and purgatives, he ſays he had many inſtances of ſucceſs.—He ſays it is a common practice there among the negroes. "Les négreſſes, aujourd'hui, dès qu'elles s'apperçoivent que leurs enfans ſont menacés de la maladie, elles les baignent, ſans autre façon, & les arroſent avec des grandes *Couyes* (eſpece de groſſe écueller, fruit de Calebaſſier) pleins d'eau *."

* Nouvelle Relation de la France Equinoxiale, p. 73, & 74.

We

We find alſo phyſicians in the beginning of the fifteenth century following this doctrine, and curing their patients by it.

VALESCUS DE TARANTA ſays, he cured a man of the *Tetanus* in the following manner.—The patient was held upright by four men, and had twenty large pitchers of cold water poured on him, down his neck and all over his body and limbs; he was then immediately placed before a fire, and an hour and half afterwards, his neck, back, legs, and arms were well rubbed with the *Unguent. Martiat. Dialtheæ, Agrippæ, et Ol. Caſtorei.*—He gave him nothing internally but chicken broth †.

From much unſucceſsful practice, and often reflecting on this HIPPOCRATIC doctrine, and GALEN's judicious, and PAULUS's injudicious comment on it, I diſcovered two modes of applying cold water equally advantageous, though the ends to be obtained are widely different; and alſo where the dangers of this *anceps auxilium* lie, and how they are to be avoided.

* Lib. I. Cap. 27, de Convulſione.

The firſt is,—ſuppoſing the patient a proper ſubject, to plunge him into the ſea; or into a river; or into a large tub of water; where he is to remain for a few minutes, keeping his head carefully ſupported, that he may not be ſuffocated in ſtruggling from the ſpaſms. He is then to be taken out, after having fatigued himſelf a little, and to be wiped dry, and put into a warm bed; and if a warm ſweat break out, it is to be promoted by antimonial wine and laudanum; diluting as much as poſſible with warm chicken broth. But if a warm ſweat be not raiſed by the firſt immerſion, a ſecond is to be made two hours afterwards, and if that ſhould not produce the effect, ſweating is to be no farther urged; nor is a ſweat to be continued, where it does not relieve; nor is a ſecond immerſion to be made, when the patient's ſkin remains cold after the firſt; and if his ſkin ſhould be hot without ſweating, recourſe muſt be had to the ſecond proceſs.

The ſecond is,—to uſe the cold water immerſion as before; or to place the patient naked under a pump; or in a current of water; where he is to have all the force of the water directed on his neck, back, and body, for a few minutes; or to lay him on a floor, where,

from

from two, to eight or ten pailfuls of the coldeſt water are to be thrown, one after another, ſuddenly on him. After either of theſe applications of water, he is to be wiped dry, and to be wrapped round with a warm ſheet, without any other covering, and to be put into a moderately cool room. This operation is to be repeated every three or four hours, while it continues to moderate the ſpaſms, or to raiſe, and keep up an heat on the ſurface of the body ;— the heat is to be promoted with wine, volatiles, antiſpaſmodics, and cordials. But this proceſs is not to be repeated longer than the ſkin continues ſufficiently warm ; for if the cold ſweats incident to the *Tetanus* continue, or increaſe, the patient will be deſtroyed by being expoſed to the cold, after the water. But the medicines are to be continued, and bark is alſo to be given. Bark is in any caſe always to be given, on the decline of the ſpaſms. Here another caution is likewiſe neceſſary, which is, if a warm and profuſe ſweat ſhould break out, at any time, the affuſion of water muſt not be farther repeated, becauſe it will check the ſweat, and deſtroy the patient ; which, if encouraged, as in the firſt proceſs, will cure him.

Some ſurgeons, in the French colonies, immerge the patient in a cold bath by ſurpriſe, and there let him ſtruggle until he has nearly exhauſted himſelf, which is frequently attended with ſucceſs. Others make deep ſcarifications, or cauteriſe the neck and back; which, with glyſters, emetics, purgatives, cordials, and diaphoretics, they ſay, ſometimes ſucceed.

Desportes ſays, he cured a negro woman, by making a ſeton in her neck, with an hot needle. But there are ſo many cures related by different writers; which have been performed, by trivial means, that one cannot conclude the diſeaſe to be otherwiſe than ſpurious.

Bontius and Piso have not mentioned any thing to be relied on in this diſeaſe. The former purſued the old practice of dry cupping the ſpine, ſhoulders, and breaſt; anointing with warm oils, glyſters, baths, ſal prunellæ, and opiates*: and the latter depended on bleeding, acrid glyſters, ſudorifics, baths, fumigations, frictions, anointing the ſpine with oils, and the juice of tobacco, and covering the patient, to promote ſweating†.

* De Spaſmo. † De Spaſmo.

The

The Spaniſh ſurgeons in the colonies, bleed their patients when plethoric, in both arms and legs; then vomit them, and afterwards give theriaca in wine. The next day they make ſcarifications down from the head to the legs, in the poſterior part of the body; and irritate the parts every two hours, with roaſted *Coratoe (American Aloe)*, which they peel, that the juice may come out freely, and then rub the ſcarified parts with it.

The negroes generally apply frictions of warm olive oil, rum and ſoap, oil of amber, &c. with their hands heated over ſome coals; and then cover the patient, and ſweat him. They are encouraged in this method, by the eaſe that is ſometimes produced while they apply their frictions, which is done with ſome violence. But the ſpaſms ſoon return, and they find their labour is in vain. They alſo give internally ſtrong vervain tea, or the juice of the herb, and other inefficacious vegetable drinks.

HILLARY's idea of the intentions of cure in this diſeaſe, was to "remove the cauſe, and then the effects*." In this no perſon, I believe,

* "Firſt, to remove and take away the irritating cauſe which affects the nerves; and then to diminiſh and take off

lieve, will differ from HILLARY. DE HAEN had much the ſame ſentiments.—But how are theſe intentions to be anſwered † ?

It is a great misfortune that we know ſo little of this diſeaſe, more than its effects, that a complete rationale, hitherto unattempted, cannot be eſtabliſhed for the treatment of it.

the ſtimulation, and irritation of the nerves. And, ſecondly, to relax the rigid tenſeneſs and contraction of the nerves, tendons, and muſcles, of the parts affected." HILLARY, page 231.

† In 1777, a very induſtrious writer at *Vienna* collected what had been written on the *Tetanus*, and intitled his work "*Commentarius de Tetano*, plus quam ducentis clariſſimorum medicorum obſervationibus, nec non omnibus hactenus cognitis adverſus *Tetanum* remediis inſtructus." — TRNKA.— He adopts the opinion that AIMAR, a French Surgeon, firſt diſcovered the uſe of mercurial frictions, by accident, in the locked-jaw. But though the author has left the ſubject where he found it, and perhaps has laboured more in vain than any man ever did, yet there is one thought in his book that makes ſome atonement for his loſs of time, and may a little relax the muſcles of thoſe who read it. He ſuppoſes the *Tetanus* gave riſe to the poetic fiction of people being metamorphoſed into ſtone. So that his ſuggeſtion, whether it accord with the ſentiments of phyſicians or not, may have great value among antiquaries; who may determine that he has detected the fallacy of OVID's petrifications; and that *Aglaurus*, on account of her ſiſter's happy marriage, *Anaxarete* at the ſight of the corps of *Iphis*, and *Niobe* for the loſs of her children, were not converted into ſtone, but actually died of the *Locked-Jaw*.

There is no diſeaſe in which the ancients differ ſo much as in this. Nothing can exceed the contradiction that is found between HIPPOCRATES and ÆGINETA: ARETÆUS and AETIUS. Nor is there any diſeaſe where the moderns have added ſo little, to the little the ancients have left them. Nothing can be collected, conſiſtent with rational theory, from all the practical remarks that have appeared. Mankind nevertheleſs have been benefited by many publications. The good reſulting from the occurrences of unſucceſsful practice, teaches what ſhould be avoided, if it cannot what ſhould be embraced.

But it is a dreadful reflection on the ſtate of a profeſſion, that ingenuity and plauſibility, without the ſmalleſt pretence from practice and obſervation, ſhall erect doctrines on the ſanction of a name, and intrude on the world their inſubſtantial conjectures, and betray the inexperienced to a reliance on their authority. Uſeful means are thus often neglected, and the life of a fellow-creature is ſacrificed, on the barbarous altars of deluſive ſpeculation.

In the courſe of the various books I have read on this ſubject, I cannot omit mentioning one publiſhed in 1776, at Paris. It is intitled,

Projet d'Inſtruction ſur une Maladie Convulſive, fréquente dans les Colonies de l'Amérique, connue ſous le nom de TETANOS, *demandé par le Miniſtre de la Marine, à la Société Royale de la Médecine.*

I ſhall ſelect but one paſſage from this performance, in conſequence of a very extraordinary remark of CULLEN's, which will be ſufficient to ſhew how far the author's knowledge was the reſult of practice and obſervation, in thoſe parts of the world, where the diſeaſe he treats of makes its ravages.

CULLEN ſays, in his Firſt Lines, Vol. III. page 173, "I have been further informed, that the *Tetanus*, in all its different degrees, has been cured by giving internally the *Piſſelæum Barbadenſe*, or, as it is vulgarly called, *Barbadoes Tar*. I think it proper to take notice of this, here, although I am not exactly informed what quantities of this medicine are to be given, or in what circumſtances of the diſeaſe it is moſt properly to be employed."

The French author, in conſequence of this, ſays, page, 93, "Nous apprenons encore de M. CULLEN, qu'on a employé contre cette maladie

ladie *une Plante* * qui croît dans les Barbades & dans quelques autres iles de l'Amérique, & qui eſt indiquée par *les Botaniſtes*, ſous le nom de *Piſſelæum Barbadenſe*; on aſſure que ſon uſage intérieur a ſuffi pour opérer quelques guériſons; mais *le Practicien*, d'après lequel nous en parlons, ne connoît ces ſuccès que par le rapport qui lui en a été fait; *il ignore la doſe & les préparations*, de ce remede, ainſi que *les circonſtances de la maladie* où il faut l'employer: auſſi ſuſpend-il ſon jugement. Nous ne pouvons *qu'imiter ſa prudence*, & attendre que l'expérience nous ait donné à ce ſujet des connoiſſances ultérieures & certaines."

If after ſuch information, I may preſume to offer mine, it is, that *Barbadoes Tar* produces no benefit whatever in the *Tetanus*. And farther, that even externally applied, the proper

* This "*Plant*," as the author calls it, and which, he ſays "grows in Barbadoes, and ſome other American iſlands, and is diſtinguiſhed by *Botaniſts* under the name of *Piſſelæum Barbadenſe*," happens to be an oily, bituminous fluid, iſſuing from ſome hills in the iſland of *Barbadoes*. It is, in general, of a dirty black colour, inclining to a green. The method of procuring it is to dig an hole, or trench, in, or very near the place where it oozes out of the earth; this, by degrees, fills with water, having a thick film, or cream, of this liquid bitumen ſwimming upon the ſurface, whence it is ſkimmed off, and preſerved in earthen jars, or other veſſels.

way of uſing it, it is of no ſervice.* It is ſometimes ſerviceable uſed in embrocations, in old ſpaſmodic contractions, and pains in the joints.

That *Barbadoes Tar* ought to be uſeful in the *Tetanus*, is, in theory, reaſonable enough; and ſo ought muſk, caſtor, camphire, and aſſafœtida, "quæ vicino malo ſæpe ſuccurrerint;" but in practice they are not, and are as little to be depended on alone, as *Arnicæ Flores* †, *Phoſphorus Urinæ* ‡, *Fimus Equinus* ||, or *Goats Urine and Water*, the vaunted remedy of MARCELLUS §.—"Nec poſt rationem, medicinam eſſe inventam, ſed poſt inventam medicinam, rationem eſſe quæſitam ¶."

From what I have ſeen of the *Tetanus*, I make the following concluſions.

That it is a ſpaſm ſeated only in the muſcles, ſubſervient to the animal functions:—

* CANVANE uſed it, mixed with Caſtor Oil, in frictions to the neck and ſpine, in the Tetanus, and he ſuppoſed with ſucceſs. He is another who conſidered ten or twelve grains of opium, given in twenty hours, an immoderate quantity.

† COLLIN. ‡ BOENNECKEN.

|| PAREY. DE HAREN. § De Medicam. Cap. 18.

¶ CELSUS.

That

That whether original, or ſymptomatical, it is cauſed by irritation :—

That the poſition of the body depends on a greater quantity of muſcular fibres, contracting againſt a leſs quantity :—

That the curative indications are either,—

I. To reſolve partial irritation into univerſal irritation, by *metaſtaſis*.

OR,

II. To remove irritation from the parts affected, by *derivation*.

OR,

III. To take away the irritability of the parts affected, by *ſedatives*.

OR,

IV. To leſſen the power of the parts affected, by inducing an *atony*.

The firſt is effected by a judicious application, and ſometimes a repetition of cold baths ; which, in imitation of nature, brings on an artificial intermittent (which, according to

HIPPO-

HIPPOCRATES, and experience, is a ſolution of any prior diſeaſe in the body *), beginning with rigor, ſucceeded by heat;—or by wine, cordials, and ſuch means as cauſe a fever without a rigor.—The ſecond is effected by bleeding, or ſweating, or vomiting, or purging.—The third has been attempted by opiates, and calmants.—The fourth by warm baths, and relaxants.

Judgment is required to decide where either method is to be uſed; depending on the age and habit of body of the patient; and on the cauſe of the diſeaſe, and on its ſymptoms. They are not to be confounded together, but are to be uſed ſeparately; and where ſome almoſt immediate benefit is not obtained, the inference is, that that proceſs is not ſuitable to the ſtate of the patient, and recourſe ſhould be had to one of the others.

The *Tetanus* is endemial among children in many places between the tropics; but by no means, as ſome have ſuppoſed, depending on ſituations near the ſea, or expoſed to winds †. When it invades them it is generally on, or before the eighth or ninth, and ſeldom after the twelfth or fourteenth day, from their birth.

* Epidem. Lib. VI. Sect. 6. Art. 7.

† BAION.

AETIUS

AETIUS knew but little of this diſeaſe, when he ſaid, "neque autem infantibus, neque ſenibus convulſio fit tetanica *:" nor was ARETÆUS conſiſtent with his uſual preciſion, when he aſſerted, "pueri aſſiduè hoc morbo vexantur, ſed non admodum pereunt—juvenes rarius quam pueri id patiuntur, ſed crebrius intereunt —viri minime—at ſenes inter omnes magis et eo vitio corripiuntur et eo necantur †."

The French term the *Tetanus* in children, *Mal de Mâchoire*. The Engliſh call it the *Jaw-falling*. The reaſon for both theſe appellations is, that the lower jaw is the firſt part attacked, and often the only ſeat of the rigidity. Beſides, the lower jaw ſometimes cannot be brought to join the upper jaw, and the mouth keeps rigidly open; as ARETÆUS (and he only) obſerves ſometimes happens in the *Opiſthotonus*. It frequently ends in a paralyſis of the muſcles of the jaw, when the chin falls down; which the negroes tie up with bandages. This, by the ignorant, is taken for a diſlocation. Not but that a diſlocation of the jaw does alſo ſometimes happen, and like this, is a mortal ſymptom ‡.

* Tetr. II. Serm. 2. Cap. 39.

† De Tetano, Cap. 6.

‡ Εν τοισι τετανοισι και οπισθοτονοισι γενυες λυομεναι, θανασιμον. HIPPOCRAT. Coac. Prænot. N. 361.

Some

Some nosologists *, I know not why, call the *Tetanus* in children *Trismus Nascentium* :— which, rendered in English, implies, *a grinding, or gnashing of the* TEETH *of new-born babes.*

The word Τρισμος, (from Τριζω, *Strideo*) imports *Stridor* ; Ηρισις, Βρυγμος ;—and is never used but where a sound, or noise, is meant to be expressed. Besides, the *Trismus* is a temporary and partial spasm of the jaw only ; not, properly speaking, a disease of itself, but a symptom, attending many spasmodical affections. It is caused by the *Pterigoid* muscles endeavouring to act, when the *Temporal* and *Masseter* muscles are contracted.

Negro children are chiefly the victims of this disease in the West-Indies. The infants of the poor and miserable inhabitants of *Vivarais*, in France, are subject to the *Sarrette* ; and those of the Mediterranean islands, to a similar disease : both, in some circumstances, analogous to the *Tetanus*. But the true *Tetanus* among children, as well as all other *Tetani*, is the genuine produce of warmer climates. It may occur in other places, but does not often. In Switzerland, Tirol, Piedmont, and Savoy,

* CULLEN, &c.

many

many children periſh by convulſions; but not of the tetanic kind. Obſerving what HOFER has written *, and others have erroneouſly propagated, I aſcertained this fact while I was in thoſe countries; and had the corroborating teſtimony of doctor MENGHIN at *Inſpruck*, and doctor DAQUIN at *Chambery*: both ſkilful phyſicians, of long practice, and men of the greateſt candour and judgment.

The cauſe of the *Tetanus* among children in the Weſt-Indies, is generally attributed either to the intemperance of the mother during pregnancy; or to the irritation of the navel after birth; or to the ſmoke of the lying-in room, or to the dampneſs of its ſituation; or to the careleſsly letting in cold air upon the child. Some people even attribute it to the wickedneſs of the mother, to avoid the trouble of bringing up the child.—The negroes often charge it to the malice of *Obea*, or witchcraft. Speculators have ſearched for other cauſes in the moſt remote corners of nature.

That negroes who never ſee this accident happen to white children, nor to any others that have proper care taken of them, if born

* Act. Helvetic. Vol. I. pag. 64.

healthy,

healthy, ſhould attribute it to witchcraft, is very natural; but that phyſicians ſhould be ignorant of the cauſe, and that the effects ſhould ſo often be permitted to happen, is extraordinary and unnatural.

Some of the above cauſes, doubtleſs, occaſionally take place. But the more common are, the ignorance and inexperience of the mother, and the want of attention, or neceſſaries, to keep the child dry and clean; for it often remains wrapped, or rather girted up, in the ſame wet rags for days together; and whenever there is any diſcharge, or drivelling from the mouth, that alſo is ſuffered to remain, chilling the jaws and throat with cold moiſture. In theſe things, and in not ſufficiently purging the child, to carry off the meconium, and firſt milk, and from the heat and cloſeneſs of the huts, the miſchief originates.

To prevent the evil in the Weſt-Indies, which is moſt often ſeen where the mothers of the children are very young, or very poor, or very worthleſs, ſuch women, at the time of their lying-in ſhould not be committed to their own management, nor be allowed to remain in their own houſes, ſolely under the care of an old

old negro woman midwife, who is generally ſuperannuated.

Upon every plantation there ſhould be a convenient and ſpacious lying-in room; and, for many reaſons, it ſhould be as near as poſſible to the overſeer's houſe. No fire ſhould be ſuffered to be made in it, unleſs there were a properly-conſtructed chimney, to convey away the ſmoke. But it would ſtill be an advantage to have a ſmall anterior room to have the fire-place in, that the bed-room might not be ſtifled with heat, in which negroes ſo much delight. Here the woman ſhould be delivered, and remain under the direction of the ſurgeon of the eſtate, and the indulgence of the overſeer, until all the danger of both mother and child is over, and until the mother is able to take care of her child. But when, as it often happens, that the mother is an improper perſon to truſt with the child, it ſhould be taken from her, and be given to a careful nurſe to bring up.

The deaths occaſioned by this diſeaſe in the Weſt-Indies, conſtitute a greater drawback upon the population of the negroes, than can eaſily be imagined; as the number that periſh by it annually is ſcarcely to be credited. This drain

drain of native inhabitants is far more detrimental to eſtates in the courſe of time, than all other caſualties put together.

In the French colonies, if DAZILLE, a phyſician, whom I have before mentioned, and who lived there, is to be credited, the depopulation of negroes ariſes from a want of ſufficient food, from bad clothing, and from working them beyond their ſtrength :—" *une nourriture inſuffiſante, le défaut de vêtements, & un travail au-deſſus leurs forces, font périr le produit annuel de la génération des negres, & l'objet de l'importation* *."

Theſe things happily do not exiſt, I know, in the Engliſh colonies ; and I have many doubts, from what I have ſeen, of their exiſtence in thoſe of the French. An individual may be abſurd or wicked, but a whole nation cannot. The French are not leſs renowned for

* *Obſervations, &c. par* M. DAZILLE, *Médecin*, &c. publiſhed at Paris in 1776. This gentleman ſays, page 22, that in the French colony of Hiſpaniola, there have been for a certain number of years only about 300,000 negroes, though the annual import has been nearly 25,000 ; that there are in the iſles of *France* and *Bourbon*, only 40,000, notwithſtanding the import into thoſe iſlands has been annually about 3000 ; and that the mortality in the moſt healthful, colonies is nearly the ſame as in the moſt unhealthful, from the above cauſes which he aſſigns.

mildneſs

mildneſs than for liberality; and if ſuch a dereliction of virtue were not repugnant to ſelf-intereſt, there would be but few among them found to make it from avarice.

As the *Tetanus* in children cannot be cured, though an accidental recovery ſometimes happen, it is unneceſſary to recite how often cold baths, and other means have been tried to no purpoſe, which might have been ſucceſsfully employed in its prevention.

I have given this part of the ſubject conſideration, becauſe it is a remediable evil. It is not a vain declamation againſt grievances that do not exiſt; or exiſting admit of no cure. This ſtrikes not leſs forcibly at the intereſts of policy, than at the concerns of humanity: and I am ſatisfied that theſe remarks will be attended to in the French, as well as in the Engliſh colonies.

ON

CANCERS.

A CANCER is one of thoſe calamities, againſt which there is no prevention ;—the cauſe creating no ſuſpicion until the effects are preſent. A ſurgeon, or a phyſician, would be thought to have wonderful ſagacity, who could prognoſticate what injury, or what habit of body, would generate a carcinomatous diſeaſe.

Cancers are of two ſorts : ſchirrous, or occult, and ulcerated. There is alſo a minor ſpecies of cancer, called a cancerous ulcer. Cancers are ſeldomer ſeen in the Weſt-Indian

iſlands, than on the neighbouring weſtern continent of America. The diſeaſe which the Spaniards at *Quito* call *Mal del Valle* or *Vicho*, which is a gangrene in the rectum, and often ſucceeds fluxes, and ſometimes attacks people while they are ill with fevers, is unknown in the iſlands. So are cancers of the uterus, and an ulcerated cancer, called the *Bay-Sore*.

Cancers of the uterus, which are always lingering, excruciating, and fatal, are ſo common in the city of *Lima*, and its neighbourhood, that women ſuppoſe it contagious, even from ſitting in a chair after an infected perſon.

The *Bay-Sore* which is a true cancer, commencing with an ulcer, is endemic at the *Bay of Honduras*. It is frequently ſeen on the Muſquito ſhore alſo, and along that part of the continent.

This diſeaſe is alſo fatal, if neglected. But being within the reach of ſurgery to remedy, that remedy is the object of the preſent diſcuſſion.

Every part of the face, body, and limbs, is ſubject to be the ſeat of this diſeaſe.

The

The cauſe of it is ſo little to be aſcertained by any reference to the ſtate of the habit of the body, that it is generally ſuppoſed to ariſe from ſome external agent.—The Indians ſay, that it is produced by a large fly depoſiting its eggs in the fleſh.

The method of curing this cancer is very ſimple, though painful. But from the experience I have had, I can venture to aſſert, that the ſame method will cure any external cancer whatever, that is curable, in any part of the world, where the application can be made in ſuch a manner, that the diſeaſe and the medicine may be brought into contact.

The method is this.—Spread a plaſter, of *Diachylon with Gum*, upon thin leather, the ſize of the cancer. Suppoſe the plaſter to be as large as a crown-piece, or a Spaniſh dollar, ſprinkle on it a ſcruple of *Corroſive Sublimate of Mercury* finely powdered; and ſo in proportion to a larger, or ſmaller plaſter. This plaſter muſt be applied to the cancer, and remain on it forty-eight hours; but if there be any apprehenſion that it has not done its office in that time, it muſt remain longer. Then take it off, and apply a poultice of bread and milk,

with a little olive-oil, which muſt be renewed frequently, until the cancer comes entirely out, by the roots as it were. The part is then to be dreſſed, digeſted, and cured as a common ulcer. A purge or two with *Calomel*, muſt precede the application. No other preparation is neceſſary, in habits otherwiſe healthy. But when the patient is groſs, or in a bad ſtate of body, as in all other caſes, he muſt be properly prepared for the operation. *Bark* is ſometimes neceſſary, to forward the digeſtion and cure.

This method was practiſed, to my knowledge, by a perſon who lived many years, and was in extenſive practice, and in great reputation for curing cancers at the *Bay of Honduras*. It never failed him, in many hundreds of caſes. He there extracted one, which weighed eleven ounces, from the inſide of a man's thigh; and completed the cure in four weeks.

It is ſurpriſing to ſee how intirely corroſive ſublimate, thus applied, will ſeparate the unſound from the ſound parts; and let the figure of the cancer be what it may, and its ramifications ever ſo numerous, the whole diſeaſed part,

part, if within reach of the application, will be detached, and come away all together, leaving the cavity clean, and frequently free from the ſmalleſt remains of diſeaſed fleſh.—This is extracting a cancer, and I believe there is no other way of curing any genuine cancer, except by extirpation with a knife.

Crab-Yaws, as they are called, which are the relicks of the *Yaws*, in the feet, are extracted by the ſame application. There it is neceſſary, only to pare off the top of the *Yaw*, and then lay upon it a diachylon with gum-plaſter ſprinkled with the corroſive ſublimate powdered, the ſize of the *Yaw*, and let it remain for two or three days.—On taking off the plaſter, the *Yaw* generally comes out, like a plug; if not, it digeſts out in a few days, with common dreſſings, and the part ſoon gets well.

Cancerous detached and ſingle glands, and tumours much diſeaſed, but not ulcerated, may be extracted in the ſame manner. But ſhould the tumour be deeply ſeated, before the application, the cuticle may be removed on the preceding day, by a bliſter, or by a ſlight rubbing with a cauſtic, to the extent and dimenſion intended to be acted on:—in ſuperficial tumors

this is not neceſſary. If the tumour be only ulcerated in the middle, it will be neceſſary to circumſcribe the whole induration, and ſometimes, though rarely, it may be neceſſary to put a little of the powdered ſublimate round the circumference of the diſeaſed tumour, when it begins to looſen, ſhould any part adhere obſtinately, to haſten its ſeparation from the ſound fleſh.

Arſenic will not produce the ſalutary effects, obtained by corroſive ſublimate. I have tried it by every mode of application, in conſequence of the reputation it has undeſervedly borne, in cancerous diſeaſes.

I have frequently found, in extirpating a cancerous, or ſchirrous tumour in the breaſt, and other parts, where there has been a chain, or knot of ſmaller indurations leading from it, that the application of this plaſter to the principal ſeat of the diſeaſe, has deſtroyed the other ſwellings; partly from the adjacent inflammation, and partly, either from the mercury in the act of abſorption, paſſing through theſe glands in following the courſe of the lymphatics, while penetrating the ſyſtem, or from its peculiar influence on this ſeries of veſſels.

As a proof that corroſive ſublimate thus applied, pervades the whole habit, the mouth is generally affected with the mercurial taſte and fœtor ; and ſometimes the ſalivary glands are conſiderably affected, and ſalivation is raiſed, particularly when the application is conſiderable, and made to the breaſt.

In cancers every thing depends on the mode of applying the ſublimate as I have deſcribed. —Yet, beſides the ſolubility of ſublimate, there is a ſpecifical difference between the corroſion of ſublimate and that of arſenic. Arſenic applied alone, or quickened with the addition of ſublimate, to old ulcers, for example, to deſtroy fungous fleſh, which in leprous and leucophlegmatic habits, is frequently ſo quick of growth, and ſo enormous in hot climates, that no other application, but the knife, is equal to its removal, rots indiſcriminately the ſound and unſound fleſh wherever it comes in contact. It therefore requires great care in the application. I have known it, when injudiciouſly applied, to eat down to a large artery, and occaſion the loſs of a limb. Corroſive ſublimate uſed to the ſame end, though an improper application, will not cauſe the ſame miſchief ; for in theſe caſes, though it may cauſe great inflammation, it is bounded in its cor-

corroding action by healthy flesh; or acts on it but slightly as a destroyer.

Arsenic has a tendency to deaden, and destroy the functions of organised parts. Corrosive sublimate to inflame those parts, and increase the circulation of their contents.—Thus the irregular, and imperfect attachment of diseased glands, or any morbid body surrounded by healthy flesh, is broken, and the part itself expelled from its situation, by means, imitative of those which nature always assumes, through the operation of locally-excited action.

Surgeons have never known but two topical modes of treating inveterate cancers. One by amputation; the other by corrosion. The first is often impracticable, and the latter always dangerous.

Empirics have succeeded better. Their method is to extract them. I have seen many of these itinerants, in different countries, extract cancers with the greatest facility. And before I knew that the only application, however disguised, which could produce such a wonderful effect, was corrosive sublimate, I had tried every kind of mineral and vegetable preparation

tion that could be thought of, without ſucceſs.

A late very ingenious ſurgeon in London, Mr. *Juſtamond*, was miſtaken in his theory of the effects of arſenic, as ſpecifical in cancers *. His conjectures, which he had adopted from others, that cancers are "produced from inſects, or the germina of them, taken up from the air by the lymphatic veſſels," as a mere hypotheſis, were well ſupported: but when proof is required, the beſt arguments, alone, are invalid.

It has been ſuggeſted, and with reaſon, ſince the firſt edition of this book, that the application here recommended, may be productive of miſchief in the hands of the raſh and ignorant. Therefore, it may be proper to embrace this opportunity to add ſome admonitions and cautions, which in addreſſing ſkilful medical people only, might be unneceſſary.

* AVICENNA certainly gave *Arſenic* internally, for ulcerations in the lungs. He ſays, in Lib. II. Tract. 2. there are three ſorts of *Arſenic*; white, yellow, and red. Of the laſt he ſays, "datur ad potandum, inflatis cum aumeli, et hydromelle, et aſſumitur, cum gumma pini, ad *Triſſim antiquam, et ſputum ſaniei et ſanguinis*: et quandoque ponitur in pilulis, quæ ſunt ad *Aſthma*."

Bringing

Bringing the power of the mercury into contact with the diſeaſed parts, being neceſſary for their extirpation, it is certain that the application is moſt ſucceſsful in local cancers, affecting a ſimple gland, or ſome cartilaginous, or muſcular part: and that in large maſſes of glands, breaſts of women, and parts where there is no aſcertaining the bounds of the diſeaſe, and where the cavities, or communications may be deep, irregular, and extenſive, its ſucceſs muſt be precarious. And as ſublimate externally applied is violent in its action, anatomical knowledge, and medical judgment are required, to determine whether the diſeaſe be within the reach of its effects, and the patient a proper ſubject for its application. Otherwiſe it may not only be applied in vain, but highly injuriouſly; and when to a large ſurface, in delicate and irritable habits, it may excite inſupportable pain, dangerous fever, commotions in the nervous ſyſtem, and convulſions.

ON THE

BELLY-ACHE;

OR,

COLICA PICTONUM.

MUCH has been written of the hiſtory, cauſe, and effects of this diſeaſe, by CITOIS * and Sir GEORGE BAKER †; a multitude have followed their ſteps.—The ſubject,

* "De novo et populari, apud *Pictones*, Dolore Colico Bilioſo." This colic received the name from *Poitou* in France, where it firſt appeared in 1572. The name of *Colica Pictonum* was given to it by CITOIS, or CITESIUS, as he calls himſelf, in his *Opuſcula Medica*, printed at Paris in 1639. He is the firſt who wrote expreſsly on this diſeaſe, and, according to ELOY, in 1616; and not RIVERIUS, as HILLARY and ſome others imagine. RIVERIUS did not write on this diſeaſe until 1640.

† London Medical Tranſactions.

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however, is not quite exhauſted, and a few words may ſtill be added, without diminiſhing the credit of what has been already done, or increaſing the uſeleſs catalogue of the *ſervum pecus imitatorum.*

The *Belly-Ache*, in the Weſt-Indies, is the offſpring of diſeaſed ſecretions, from debility, in the ſtomach and inteſtines. It is endemial in the Weſt-Indies, and epidemical, or accidental, in moſt other parts of the world.

In Europe, I believe, it has often viſited particular diſtricts epidemically; for the devaſtation it has made at different periods, in many places, muſt have had a cauſe more general, than wines impregnated with ſaturnine ſolutions:—one of its notorious cauſes.—It often ſtill appears in ſome countries, in the autumnal ſeaſon, but not uniformly. In the autumn of 1787, I did not ſee one perſon afflicted with it, in any town near the *Rhine*, from *Cologne* to the lake of *Conſtance*. There was not one patient with the *Belly-Ache* in the hoſpitals at *Coblentz*, *Frankfort*, *Manheim*, nor *Straſbourg*: nor did I ſee any afterwards at *Kempten*, *Inſpruck*, *Brixen*, nor *Trent*: nor any peaſant, or other perſon, with its paralytic effects.

fects.—The result of my remarks in *Normandy* in the autumn of 1785, was the same.

Doctor MENGHIN of *Inspruck* told me, it is a common disease in the Tirol; but that it is generally attributed to the preparations of lead, with which the people in the Tirol, and Italy, mix, adulterate, and sweeten their wines. He cautioned me to avoid all sweet wines whatever, but particularly the common tavern wines upon the road, that had a sweet taste, in the Tirol, and Italy. I mention his excellent advice as a caution to others.—I never deviated from it but once, and paid dearly for it at *Viterbo*.

Whatever is the cause of the *Belly-Ache*, the symptoms and effects are the same, varying only in extent.—The principal symptoms are, costiveness generally, sickness of the stomach, or vomiting, and pains about the navel; which, when excruciating, give the eyes a glassy and wild appearance. When the disease is obstinate and often returns, a paralysis is generally the effect:—first, of the hands and arms, then of the feet and legs. This paralysis is attended with wasting of the muscles of the limbs affected, and a contraction of the parts (as flexors are with more difficulty destroyed than extensors), particularly of the hands, and there most

moſt remarkable in the *abductor and flexor* muſcles of the thumbs: where the waſting always begins, and when people recover, by making voyages at ſea, or by coming to England and uſing *Bath* waters, the remains of the diſorder are moſt viſible *.

In habits of body diſpoſed to receive this diſeaſe, other diſeaſes will bring it on: ſo will coſtiveneſs, aſtringent medicines, bark, acids, irregularity in diet, check to perſpiration, anxiety, and indulging aphrodiſiacal paſſion.

The poraceous matter diſcharged in vomiting, in ſevere attacks, is generally ſo corroſive, and ſtyptical, as to excoriate and contract the throat and fauces; and frequently changes the appearance of ſilver utenſils to a black colour, as if they had been in contact with the phlogiſton of ſulphur.

* *Peter Columbus*, ſteward to captain *George Young* in the St. Vincent's trade, loſt the uſe of his arms and hands three times in the Weſt-Indies, by the belly-ache. It attacked him after his recovery from fevers, in which he took much bark. On his return to England each year he was afflicted, he went to Bath, where he bathed, drank the water, and had his limbs pumped on; by which means he entirely recovered their uſe. In 1781 he remained at Bath eleven weeks; in 1786 ſeven weeks; in 1788 ſix weeks.

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The belly-ache ſeldom attacks people recently arrived in the Weſt-Indies; yet HILLARY is ſo miſtaken, as to aſſert otherwiſe. The natives and long reſidents, are almoſt always the ſole objects of this diſeaſe.

Soldiers, unleſs they have reſided long in the Weſt-Indies, notwithſtanding their irregularity in living, are not often afflicted with the belly-ache, though frequently with the *Bilious Colic*, which is generally brought on by crude diet, drunkenneſs, and its conſequences. This diſorder, to which newly-arrived troops are moſt ſubject, and another ſpecies of *Colic* brought on by the exceſſive and injudicious adminiſtration of bark, tranſient medical people have often miſtaken for the belly-ache; and its ſubſequent debility for paralyſis. From theſe errors, fatal conſequences have ariſen.

The belly-ache, as a diſeaſe, is almoſt as common as ever it was among the inhabitants of the Weſt-Indies. It is thought otherwiſe chiefly becauſe its devaſtations are not ſo often ſeen, in wandering ſpectres about the ſtreets, as they were formerly. The principal reaſon of this is, that the medical people there, at preſent, underſtand their profeſſion; and for-

merly they did not. The reſident practitioners now treat the diſeaſe properly, in the beginning, and prevent relapſes; formerly they knew not how to do either. Paralyſis, at preſent, is attributed rather to unſkilfulneſs, than to the inevitable conſequence of the diſeaſe.

Yet the diſeaſe is certainly as much a natural production of the Weſt-Indies as ever. The improved ſtate of cultivation and knowledge, has, no doubt, abated the frequency and violence of this, as well as of many other diſeaſes. The lands are more cleared than they were, and people live, and clothe themſelves more ſuitably to the climate, than they did formerly. Time and direful experience have made them wiſer than thoſe, who without rules to guide, or examples to follow, firſt encountered theſe inhoſpitable regions of expatriation.

Grog-drinkers are not particularly ſubject to the belly-ache; nor does rum appear to have any property that tends to produce it.

I have known a multitude of people in the Weſt-Indies afflicted with this diſeaſe, who ſeldom drank any rum, at leaſt not to exceſs. Mr. *John Ellis*, a planter in Jamaica, never drank any rum, yet he was conſtantly harraſſed with

with the belly-ache; and, from frequent violent relapſes, notwithſtanding his great temperance and prudence, became at length paralytic.

Though acids are certainly prejudicial to thoſe who are ſubject to the belly-ache, they do not appear to have any certain effect, originally in producing it. At leaſt punch-drinkers are not more the victims of it, than other people are. HUXHAM therefore was very remote from the true cauſe of this diſeaſe, in the Weſt-Indies, when he attributed it to lemon juice *.

The notion that ſolutions of lead, from the worms, and other utenſils employed in the rum diſtilleries, are among the common cauſes of the belly-ache in the Weſt-Indies, or that there is ever any detectable quantity of lead in rum, are both equally diſtant from my opinion, and obſervations. Such chimeras are the offspring of little chemical, and leſs medical knowledge.

Though the uſe of many preparations of lead, is much more inoffenſive than generally believed (and conſidering how indiſcreetly they are employed in lotions, coſmetics, and a va-

* "Nimio uſu acerbiſſimi limonum ſucci." *De Morbo Colico Damnoniorum*, p. 38.

riety of other local, as well as internal purpoſes, it is fortunate for many people that it is ſo), yet it is ſcarcely poſſible to ſuppoſe FERNELLIUS was ſerious, when he ſaid, an arthritic patient took a *pound and half* of white lead, inſtead of ſugar, in fifteen days time, and ſurvived it *.

Writers, I believe, have not accurately diſcriminated, between the effect of the calces, ſalt, and phlogiſton of lead.—In the latter of which, its deleterious quality conſiſts; and that principally in the act of quitting the earth of the metal, in exhalation.

That taking the ſalt, or ſugar of lead, as it is called, inwardly, ſo much extolled by phyſicians and chemiſts of the two laſt centuries, in pulmonic diſeaſes, quinſies, intermittents, dyſenteries, hæmorrhages, and inflammations of the viſcera, will cauſe the belly-ache, as well as being expoſed to the vapour of its phlogiſ-

* Huic, a me jam doloribus liberato, empiricus quidam *Plumbi pulverem* adverſus arthritim ita commendavit, ut in eo ſolo ejus recurrentis præcautionem poſitam eſſe ſtatim perſuaderet. Cujus idcirco uſum amplexus, pulveris ejus *ſeſquilibram* ex juſculis, ex vino & piris coctis, aliiſque cibis, ſacchari loco, dierum quindecim ſpatio abſumpſit. *De Luis Fen. Cur. Cap.* 7. p. 230.

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ton, I believe is certain ; but it is not ſo inconteſtably proved :—nor whether it may not ſafely be taken in ſome vehicles, though poiſonous in others.

Lead itſelf is perfectly innocent, while its phlogiſton is kept bound down and united with its earth ;—for which reaſon miners ſuffer no inconveniency from it, in mines deſtitute of inflammable air.

It is otherwiſe when fire is applied to it, which diſcharges its phlogiſton. Therefore ſmelters, and ceruſe-manufacturers are victims of its poiſon ; and thoſe exactly in proportion to the quantity of vapour, to which they are expoſed.

Ceruſe is incapable of producing any poiſonous vapour, until its phlogiſton is renovated, and volatiliſed by the application of oil ; hence painters in oil ſuffer.

Friction from the types in printing, together with the oil in the ink, and the drying of the types at the fire, cauſe an exhalation injurious to printers. Uſing the letters warm has frequently cauſed palſies. I have known many printers ſubject to the *Belly-Ache*, while they remained in their office ; and always free from it

otherwiſe. A compoſitor, at Mr. *Davis*'s in Chancery-Lane, while the firſt edition of this work was printing, had been afflicted with the belly-ache for four months, and was then in a miſerable condition. He applied to me. He was cured in a few days, aud returned to his work, and remained well, five months afterwards. He had been accuſtomed to moiſten his fingers in his mouth, to take up the letters with more facility, and alſo frequently to put letters in his mouth, while working; by which habit he frequently ſwallowed a portion of the ſolution of the metal, in the impregnated ſaliva.

But now to the Cure of the *Belly-Ache*, and the prevention of its paralytic effects. If what I have to relate do not teach a ſucceſsful method of treating this moſt diſtreſſing diſorder, I ſhall be as much diſappointed, as thoſe will be who look for hypotheſis and oſtentation, where nothing is intended but plain matter of fact and utility.

It is not to be expected that relapſes can be prevented, while people continue to follow the occupations, and habits, which cauſe the diſeaſe. What I propoſe is, to cure the diſeaſe when it firſt appears; and to adviſe the inhabitants of the Weſt-Indies, workers in lead, painters,

painters, plumbers, printers, enamellers, gilders, drinkers of auſtere, or adulterated wines, cider, &c. to purſue the following method immediately on their being attacked.

When the diſeaſe comes on, if the bowels are coſtive, let a doſe of *Manna* and *Cream* of *Tartar* be taken; or what anſwers better, if it can be procured, a table-ſpoonful of *Caſtor Oil*, called *Oleum Ricini*, and *Oleum Palmæ Chriſti*. If one ſpoonful ſhould not operate within a few hours, another ſpoonful is to be taken, and to be repeated every four hours, until it does: diluting with chicken, or mutton broth. The oil may be taken alone; or mixed with a little ſugar, and four table-ſpoonfuls of ſimple peppermint water; or in a little white wine; or warm water-gruel; or a cup of broth. Where ſtools are procured with difficulty, an emollient and purging glyſter may be given, to aſſiſt and quicken the operation of the purging medicine.

After the coſtiveneſs has been removed, and the bowels have been well cleanſed, the following ſolution will generally be found ſufficient to cure the diſeaſe.

THE VITRIOLIC SOLUTION.

Take of *White Vitriol, three drams*;
Roch Alum, a dram;
Cochineal, three grains;
Boiling Water, a pint.

Mix theſe all together in a marble mortar, and let the ſolution ſtand until it is cold, and the ſediment is ſettled at the bottom: then pour it off clear for uſe.

The cochineal is firſt to be rubbed fine in the mortar, then the vitriol and alum are to be added, and alſo rubbed fine, and laſtly, the boiling water is to be poured on the ingredients, and ſtirred until they are diſſolved. This is the ſolution mentioned at page 386, which I have now given in Engliſh, for the benefit of thoſe employed in the important branches of buſineſs I have mentioned, and who, unfortunately, often ſtand in need of its uſe.

Of this ſolution, a table-ſpoonful (for a man or woman) is to be taken every ſix or eight hours while the pain is conſiderable, and to be continued afterwards every morning faſting, for ſeveral mornings, when the pain has ceaſed:

—keeping

—keeping the bowels open, if this ſolution ſhould not do it, by taking every night, or every ſecond, or third night, at bed-time, a table ſpoonful or two of *Caſtor Oil*, by itſelf, or mixed as before mentioned.

If any griping or uneaſy ſenſation ſhould remain, notwithſtanding the bowels have been ſufficiently opened, and the ſolution taken as directed, an occaſional opiate is to be adminiſtered.

The ſolution generally cauſes retching; ſometimes it will act as a purgative; in either caſe it will be almoſt equally ſerviceable; and when a table-ſpoonful produces neither of theſe effects, the doſe muſt be enlarged until it does: —drinking now and then, particularly after retching, a draught of chicken, or mutton broth. There is no neceſſity for diluting to encourage vomiting. The nauſea which the medicine cauſes, is very diſguſting; but in that, much of its efficacy conſiſts.

I ſometimes increaſe the quantity of the vitriol, and ſometimes the proportion of alum, in the ſolution. Sometimes I omit the alum intirely in the beginning of the diſeaſe, particularly in very coſtive and bilious habits; and where

where vomiting is neceſſary to cleanſe the ſtomach.

Some years ago roman vitriol was introduced into practice in the Weſt-Indies, for the belly-ache. I often uſed it, but never after I diſcovered the ſuperior efficacy of the above ſolution; ſince that time, I have not had one patient, however ſevere the diſeaſe, become paralytic after it.

In violent and ſudden attacks of the belly-ache, where the patient has been long ſubject to it, and where relapſes have frequently happened, they generally come on with excruciating pain, and exceſſive vomiting. Here it is in vain to attempt forcing a paſſage through the inteſtines, however locked up they may be, by any purgative whatever; nor is it good practice but in extreme neceſſity, to uſe opiates to eaſe the pain; nor to unite opiates with purgatives, a practice adopted by HUXHAM, taken from RIVERIUS.—From opium and draſtic purges, great miſchief has ariſen; and hence it is that the belly-ache made ſuch havoc formerly in the Weſt-Indies.

In this ſituation of the diſeaſe, the patient is to be vomited by ſmall and repeated doſes of the vitri-

vitriolic ſolution, without the alum, and to dilute plentifully with mutton-broth; then to have a glyſter, and to be immediately put into a tub of warm water, ſo that the water may riſe as high as the thorax; here he is to remain for a conſiderable time, if his ſtrength will permit; and as the ſtomach will generally retain medicine while the patient is in the bath, he ſhould, when his ſtomach is eaſy, take the caſtor oil, or a ſolution of manna in a draught of warm ale; or neutralized lemon-juice, and large doſes of magneſia.

Should the pains not be abated by the bath, a large bliſter is to be applied to the belly, centrally over the part.

The vomiting removed, and the bowels in a laxative ſtate, the ſolution and caſtor oil are to be taken, in the manner I have already related.

CONCLUSION.

THIS volume being increaſed beyond the limits to which I at firſt imagined the materials I had aſſigned it would extend, prevents my ſaying all that I intended on the effects of the VITRIOLIC SOLUTION, in ſome other diſeaſes.

White Vitriol, though now almoſt out of uſe, for internal purpoſes, was once a great medicine among the chemiſts, under the appellation of the *Gilla*, or *Salt of Vitriol*. But, like many other excellent medicines, which they employed, it has long ſince been expunged for its vulgarity, by refinement.

The VITRIOLIC SOLUTION, is of great utility in all pulmonic oppreſſions, where reſpiration is performed with difficulty, and where expectoration is to be promoted, and the bronchial glands

glands are to be unloaded and cleanſed, in naufeating, or ſlightly vomiting doſes.

In moiſt pituitous habits, with phlegmatic aſthmas,—in catarrhal coughs, and above all in the hooping-cough, its effects are wonderful; taken once, or twice a day, particularly in the morning faſting, in doſes to cauſe a ſlight retching. In the ſame manner it removes defluxions on the lungs, bronchia, and trachea, from relaxation of the parts, or defect of their powers; and may prevent conſumptions, induced by thoſe cauſes.

In putrid ſore throats, where the fauces are clogged and loaded with ſloughs, a doſe ſufficient to cauſe a gentle action of vomiting, given once or twice a day, is of great ſervice.

The common doſe, to create a ſlight retching, for a man or woman, is a table-ſpoonful; for a child of ſix months old, a tea-ſpoonful.

In chronical diſeaſes, it is to be taken every morning faſting, for a few mornings; then to be omitted, and afterwards reſumed, and perſiſted in at intervals, as occaſion may require. But if coſtiveneſs, the common conſequence of its

its continued uſe, happen, it muſt be omitted until this impediment is removed, by ſome aperient. It is evident that the alum, in the ſolution, is an addition to the vitriol, that muſt oppoſe part of its operation; and conſequently ought to be omitted, when the effects of the vitriol, and not the reſult of their combination, are required.

Art cannot render this ſolution agreeable to the taſte, without deſtroying its virtues. Nor will the ingredients of which it is compoſed, taken in the form of pills, produce the ſame effects as in ſolution. White vitriol, beſides being in all reſpects ſafe and innocent, has advantages over every other nauſeating, or emetic medicine whatever;—which are, that the patient is not harraſſed with its operation, for that is never violent (as antimonials ſometimes are), generally inſtantaneous, and as ſuddenly over: always leaving the ſtomach ſtrongly invigorated. Neither does it ever cauſe ſpaſms in the viſcera, nor any nervous affections; miſchiefs often produced by antimonials careleſsly exhibited: and in the diſorders here mentioned, the ſolution requires neither dilution with it, nor regimen, nor reſtriction after it.

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Sometimes the ſolution, like white vitriol alone, is not only ſlow in its operation, but will not act at all, as an emetic, without ſome provocative to vomit. When this happens, where vomiting is required, or to carry off the nauſea, when it continues long, a large draught or two of poſſet drink, carduus tea, or chamomile tea, will produce the effect.

I cannot omit obſerving alſo, that in hæmorrhages from the lungs, whether attended with great arterial diſcharges, or only venal excreations, I have known it, taken in nauſeating doſes every eight hours, to remove the diſeaſe.

It diminiſhes the action of the arteries, by abating the force of the diaſtole of the heart. By thus lowering the circulation, in hæmorrhages, the danger of inducing a dropſy, from repeated bleeding, is avoided. The uſual auxiliaries muſt accompany, and favour the operation :—reſt, cool air, a lax ſtate of the bowels, and evacuations proportionate to the plethora, and other indications.

But the beſt ſecurity againſt a relapſe, in all caſes of hæmoptyſis, or pulmonary hæmorrhage, and to prevent the diſeaſe becoming chronical, and ending in conſumption, and to eſtabliſh a

permanent cure, after the firſt plethora has been ſubdued, and the habit duly prepared, before purulent ſpitting comes on*, is a long ſea voyage, or frequently repeated ſhort ones†.

Mr. *Reader*, a gentleman between forty and fifty years of age, in Jamaica, had an hæmorrhage from his lungs, and often bled nearly to death. He made ſeveral ſmall voyages, and always found himſelf perfectly well at ſea; but as he returned, and remained a week or ten days on ſhore, the hæmorrhage returned. Finding his ſtate ſo perilous, he bought a ſmall veſſel, and being a man of ſenſe and reſolution, he conſigned himſelf to the ocean; and went from place to place, until he conquered his infirmity, and regained his loſt health. The accident happened about five years ſince.—He is now well, 1787.

The greater hæmorrhages from the lungs, or thoſe of plethora, like all periodical hæmorrhages undiſturbed in their natural courſe by peculiar circumſtances, obey the influence of the moon.—Of this, I have many proofs; and that there are not more, authenticated by others,

* Ex ſanguinis ſputo, puris ſputum; ex puris ſputo, tabes. HIPPOCRAT. Aph. 15, & 16. Sect. 7.

† Vide p. 69, & 72.

is owing, I believe, to the theory on which the fact depends, not being ſufficiently known to prevent the reſult eſcaping unnoticed.

Among many inſtances which I have lately ſeen, there was one which deſerves to be recorded. A man, in Burleigh-ſtreet, in the Strand, had a cough for ſome time, which brought on an hæmoptyſis. This continued for ſix weeks, and then degenerated into a regular monthly eruption of blood from the lungs. He diſgorged about eight ounces of blood, every full moon. He was always low-ſpirited and weak, as he expreſſed it, on the day preceding the hæmorrhage. He had been in this ſtate for five months, when he applied to me. The hæmorrhage was removed by the vitriolic ſolution; but his lungs, and whole habit, were too much diſeaſed to admit of cure.—He became tabid.

This doctrine attended to, hæmorrhages which do not prove fatal in the firſt, or ſecond attack, will ſeldom be ſo afterwards; as their returns may always be moderated, and often intirely prevented; which, from repeatedly wounding the lungs, induce ulcerations there, and end the ſubject in conſumption.

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The impetus of the blood being exalted by the moon's effect on our atmosphere, it is always necessary to be watchful in every case of hæmorrhage, when her influence is greatest on the earth. And if a day or two preceding the new, or full moon, the matter expectorated be tinged with a bright yellowish hue, and gradually change to a browniſh appearance, accompanied with flushings in the face, or oppreſſion, or pain in the thorax, or languor, the ſtorm is formally announced, and blood follows.

Accidental, or ſpontaneous arterial hæmorrhages from the lungs, however ſmall the veſſel injured may be, are cured with great difficulty. But venal hæmorrhages, and ſuch as ariſe from the ſuppreſſion of menſtrual, or hæmorrhoidal evacuation are, in general, removed without much difficulty.

Captain Richard Boyle, of the 3d regiment of guards, was attacked in London, on the 20th of January, 1785, with an hæmorrhage, and almoſt ſuffocated, by the violence of the blood forcing itſelf through his mouth and noſtrils. It was preceded by a momentary tickling in his throat, that excited a fit of coughing; in

which, an artery burſt in the right lobe of his lungs. He was in the 23d year of his age, and of a plethoric habit; but free from all defect in make, that might indicate ſuch an event.

He had ſeveral ſlight returns of the hæmorrhage after recovering from the firſt attack, in the courſe of the ſame year; and was adviſed to go to the ſouth of France, to avoid the following winter in England. It was there that the hæmorrhage became periodical; and ſo faithfully obeyed the principal changes of the moon, that a ſtatement of the returns, of ſuch of them as came within my knowledge, will ſhew one of the moſt deciſive examples of lunar influence, in medicinal hiſtory.

1786, February 14th, he was attacked at *Hieres* near *Toulon*.—Full moon on the 13th.

Feb. 29th, at *Aix* in *Provence*.—New moon on the 28th.

April 15th, at ditto.—Full moon on the 13th.

April 29th, at *Tain* upon the *Rhone*.—New Moon on the 28th.

May

May 14th, at *Chalons* in *Burgundy*.—Full moon on the 13th.

June 11th, at *Dijon*.—It was then full moon.

July 11th, at *Paris*.—It was then full moon.

Auguſt 9th, at *Yarmouth* in the *Iſle* of *Wight*. —It was then full moon.

The laſt three hæmorrhages came on at the inſtant the moon appeared above the horizon.

The violence of the hæmorrhages was abated by the vitriolic ſolution, and the expectoration at other times, which was enormous, always aſſiſted by it; and latterly he had none of thoſe exceſſive and involuntary eruptions of blood, which in the two firſt of the preceding inſtances, and others prior to them which I cannot aſcertain, endangered his life. Yet, notwithſtanding the advantage we had of knowing when the effort would be made, and the precautions uſed in conſequence thereof, the circulation riſing with the rarefaction of the atmoſphere, continued to force the blood through the dilated orifice of the lacerated veſſel, and the vital fluid appeared in his expectoration, as conſtantly

conſtantly as the moon made her revolutions. This was the caſe alſo, often, ſubſequent to the preceding dates.

At length the hæmorrhages were conquered' and the period arrived, when it was my opinion, that a ſea voyage would have reſtored him to health. But before this could be carried into execution, he was overtaken by other indiſpoſitions from new cauſes, which deſtroyed every hope, and defeated all medical aid.

The remainder of his melancholy hiſtory is irrelative to medicine, and well known to thoſe who knew him.—Yet, as I have treſpaſſed on my feelings in reciting his misfortune, I cannot paſs ſilently over the exemplary and unaltered manner, in which he bore its lingering and painful termination.

During nearly four years, in which he ſtruggled under every calamity that could bend the ſpirit of man, he never betrayed a moment's thought, that had its origin in diminiſhed fortitude.—His firm mind, filled with grateful remembrance of his friends, retained its amiable luſtre, through the recapitulation of the many ſufferings

ſufferings he had endured ;——and ſmiling at the various cauſes, which, in driving him from the world, had extinguiſhed all attachment to life, " I meet death with pleaſure," he ſaid ; " —it is happineſs for me to die."

THE END.

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